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for the Behavioral and Social Sciences**

Research Report 1798

Vertical Teams in the Objective Force:
Insights for Training and Leader Development

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TRW, Inc.

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This report addresses the selection and training challenges expected for vertical teams—commanders and staff leaders of multiple echelons—in the Army's planned Objective Force. Researchers interviewed experienced warfighters and trainers operating in the Interim Brigade Combat Team (IBCT) environment. They also observed collective training events conducted by the Army's first IBCT, and reviewed Army documents relating directly to the Objective Force and Future Combat Systems. The findings document the selection considerations (knowledge, skills, and aptitudes), training issues (problems and challenges), and training methods expected to shape vertical teams in the future force. Recommendations are offered for steps to expand the database related to training, leadership, and soldier factors. The results forge a foundation for creating and sustaining high-performing teams that can fight and win on the battlefields of the future.

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FOREWORD

The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) conducts research to enhance personnel selection and training. As the Army continues its transformation to a future force capable of responding across a full spectrum of missions, more effective selection and training methods become increasingly important. The transformed capabilities and high-tech environment of the future force must be reflected in future selection and training programs. As part of ARI's research supporting the future force, this report examines key dimensions that will be critical for building and maintaining vertical teams in the 21st Century Army.

The research described in this report investigated the selection considerations, training issues, and training approaches expected to shape vertical command and staff teams in the Objective Force. Through interviews and observations conducted in the environment of the Interim Brigade Combat Team, the investigators sampled the experience and insights resulting from the Army's initial transformation efforts. The results establish a preliminary knowledge base regarding the selection and training needs of the future force. More importantly, they forge a foundation for creating and sustaining high-performing teams that can fight and win on the battlefields of the future.

This research was part of ARI's Future Battlefield Conditions (FBC) team efforts to enhance soldier preparedness through development of training and evaluation methods to meet future battlefield conditions. This report represents efforts for Work Package 211, Techniques and Tools for C⁴ISR Training of Future Brigade Combat Team Commanders and Staffs (FUTURETRAIN) and the ARI Science and Technology Objective, Methods and Measures of Commander-Centric Training.

The contents of this report have been provided to the Commander of the Army's first Interim Brigade Combat Team (3rd Brigade, 2nd Infantry Division) at Fort Lewis, Washington.

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VERTICAL TEAMS IN THE OBJECTIVE FORCE: INSIGHTS FOR TRAINING AND LEADER DEVELOPMENT

EXECUTIVE SUMMARY

Research Requirement:

Within a decade, military operations will be transformed by the new technologies, doctrine, and organizations of the Objective Force. Based on the Future Combat Systems (FCSs), a semi-autonomous suite of air and ground platforms directed by a smaller number of soldiers, this radically different fighting force will constitute a significant departure from current organizations, weapons, and soldier systems. Its doctrine, fighting techniques, and human requirements will differ substantially from the current force. Future commanders will rely more heavily on the active cooperation of subordinate leaders who can act decisively and in concert with the common plan and commander's intent. This points to a need for more effective, more cohesive vertical leader-teams to exploit the full potential of Objective Force capabilities. The current research investigated the training and leader development challenges the Army is likely to face in the tactical environment of the future.

Procedure:

The research team combined interview and observation methods to sample the experience and to capture insights emerging from the Army's initial transformation efforts. Researchers selected the Army's first Interim Brigade Combat Team (IBCT) at Fort Lewis, today's newest transformational organization, for this study. The interview audience included leaders and supervisors in the IBCT as well as leaders and trainers in elements supporting the IBCT. The interviews and observations focused on critical leader and leader team tasks, essential warfighter traits, leader training and development requirements, and training support considerations with emphasis on differences from past practices. The team also reviewed Army documents and publications relating to the Objective Force. The team's subject matter experts integrated and elaborated the data to produce insights and lessons learned for leader development and for building and sustaining effective vertically aligned teams in conceptually new organizations.

Findings:

Leader training and development emerged as the dominant theme in this research effort. The issues and challenges identified call for the development of a structured, standards-based approach for both self-development and unit administered professional development programs. Strong commitment by senior leaders to protect training time and resources is also necessary. The ability to communicate effectively will emerge as an increasingly important skill in Objective Force leaders. The tactical and technical competencies required of Objective Force leaders and leader teams seem likely to expand. This change stems from wholly new combat formations, equipment capabilities, tactics and doctrine. In the IBCT, they foretell disciplines and operations more typical of today's division and corps echelons. These include participation

in joint operations as the chief Army element, direct coordination with foreign partners in international coalition, and close cooperative relationships with civil agencies and non-governmental organizations.

Better communications and situational understanding will make dynamic teaming and "plug and play" task organization possible. Command of a task-specialized, widely distributed fighting element that is capable of changing its content without ceasing operations will impose special requirements. Leaders of such forces will have to be adept at integrating the efforts of a changing set of actors in functioning vertical teams. Beyond the necessary technical and tactical competence characteristic of effective vertical teams, team performance and effectiveness were also observed to be largely dependent on mutually shared confidence, trust, and commitment. These characteristics can be either enhanced or inhibited by the influence of the senior leader and the leader's ability to communicate effectively.

The vertical team competencies required to ensure dominance in future military operations need to be articulated in doctrine. Vertical leader team tasks, conditions, and standards need to be developed and written into Mission Training Plans (MTPs) to assure attention to leader team performance in after action reviews (AARs) and other training assessments.

In the hands of well-prepared leaders-facilitators, the experimental vignette-based leader training technique employed in the IBCT appeared to be a powerful training tool. It offers easily executable alternatives to achieve leader and team training objectives. The technique holds great promise as a means of leader development training and vertical team integration in future forces.

The research findings indicated that the introduction of new technologies, doctrine, and structure will not outmode traditional concepts of leadership. Even in boldly new units such as the IBCT, the defining characteristics of military leadership are not significantly affected. The only wholly distinctive trait anticipated for future leaders is digital competence.

Utilization of Findings:

Creating and maintaining effective vertical teams in future fighting forces will depend on the development of new training requirements and methods. The results of this research effort establish a preliminary base of knowledge for understanding the leader development and vertical team training requirements of the Objective Force. Used imaginatively, that base may serve as a foundation for training high-performing leader teams that can leverage the technology, agility, and lethality of FCS to win on future battlefields.

VERTICAL TEAMS IN THE OBJECTIVE FORCE: INSIGHTS FOR TRAINING AND LEADER DEVELOPMENT

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VERTICAL TEAMS IN THE OBJECTIVE FORCE: INSIGHTS FOR TRAINING AND LEADER DEVELOPMENT

CHAPTER 1. INTRODUCTION

Purpose

This report explores the training and leader development challenges the Army is likely to face in the tactical environment of the near future. Within a decade, military operations will be transformed by dramatically new technologies, doctrine, and organizations of the Objective Force. High performing vertical teams—commanders and staff leaders of two or more cooperating echelons—will play a critical role in successful operations. Creating and maintaining effective vertical teams in future fighting forces will depend on developing new training requirements and methods and purpose-built personnel selection procedures.

This report is the result of interviews and observation of training conducted in the Army's first Interim Brigade Combat Team (IBCT) and derived from the preliminary concepts for the Objective Force. The research was initiated to produce insights that speak to the selection and training of leaders and the development and training of high-performing vertical teams. The knowledge of current training practices in the dynamic environment of the IBCT and Objective Force concepts enabled extrapolation from the experience of the present to shed light on selection and training needs of the future.

Organization of the Report

This report is organized in four chapters:

- Chapter 1. *Introduction,* describes the background, defines the problem and states the project's technical objectives.
- Chapter 2. *Method,* presents the procedures followed to collect, reduce, and analyze the data.
- Chapter 3. *Findings and Discussion,* presents the findings pertinent to selection and training of leaders and training of vertical teams.
- Chapter 4. *Conclusions and Recommendations,* distills the report's major themes and offers recommendations for future research.

Background

The Army is systematically transforming itself into a fast-deploying, highly adaptable force that can respond to a wide variety of threats in any operational environment (Shinseki, 2000). As an intermediate step in the transformation process, the emerging IBCTs are moving toward the targeted capabilities of 2010. In the coming years, IBCTs will give way to dramatically new organizations equipped with the Future Combat Systems (FCSs). For the immediate future, they will serve as a bridge between old and new force designs (Mehaffey,

2000). Their experience in integrating advanced technology into leader teams may point to a changed approach to leading military operations.

Embedded in the Objective Force vision is the requirement for the Army to achieve significant improvements in strategic responsiveness, lethality, and flexibility. These will allow it to arrive in any theater of operation with combat power sufficient to dominate at every point on the operational spectrum. The spectrum ranges from dealing effectively with asymmetric threats in low-intensity peacekeeping, nation-building, and small-scale contingencies (SSC) to winning battles and engagements in regional conflicts and major-theater wars (MTW). Thus, prime goals of the Objective Force campaign are to improve strategic mobility, enhance lethality, and leverage technology to generate greater combat power from smaller forces. The IBCTs represent the first step in this direction.

On the future battlefield of the Objective Force, FCS-equipped units will dominate and win the close fight through (a) rapid deployment, (b) agile and dispersed operational maneuver, (c) devastating lethality, (d) quick-reaction versatility, and (e) improved survivability. Force developers expect the Objective Force to fight in dispersed, semi-autonomous formations of manned and unmanned platforms (Mehaffey, 2000). Future leaders will exploit these capabilities as well as advanced (now unknown) technologies to achieve superior situational understanding and dominance of the battlespace. These capabilities will enable them to destroy key opposition forces and facilities and to neutralize enemy counteractions with unprecedented speed and efficiency. Adaptive leaders will be crucial in fighting through unexpected events and rapidly changing battlefield conditions (Ervin & Decker, 2000). Soldiers and leaders alike will fill new positions, interact with intelligent automated systems, and perform critical functions that differ from those of the present.

Compared to the past, leaders and soldiers of the Objective Force may need substantially different knowledge, skills, and aptitudes (KSAs). Anticipating those differences and preparing to recruit, train, educate, and develop warfighters for future operations are important challenges for today's Army leaders. U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) investigators are examining these challenges to identify the emerging training and professional development needs of the Objective Force. The research documented in this report explored vertical (inter-echelon) functions in the digitized elements of the first IBCT (3rd Brigade, 2nd Infantry Division) to illuminate important dimensions for the Objective Force.

For the purposes of this report, "vertical team" refers to any grouping of commanders and staff members (linked by common functions) who must collaborate across contiguous or non-contiguous echelons to integrate and synchronize the elements of combat power. For example, commanders of widespread formations with and without past relationships will have to closely coordinate their actions to get full benefit of FCS capabilities. Likewise, their supporting staff leaders (e.g., the intelligence specialists at multiple levels) will have to act in concert to support them.

The vertical leader teams of the IBCT closely resemble those of present day infantry brigades. They differ from other brigade leader teams—and therefore represent a step toward the Objective Force—in their digitized command and control means, some of their tactics and their

orientation on rapid reaction missions. However, their established echelons of command (platoon, company, battalion, brigade), their rank structure, and the command relationships between levels of organization are identical to those of today's standard combat brigades.

Vertical teaming in the Objective Force will rely on advanced command, control, communications, computers, and intelligence (C4I) tools descended from today's Army Battle Command System (ABCS). These future systems may be as revolutionary then as ABCS is today. Using them in the dynamic tactical environment of the future may require new warfighter KSAs honed through focused professional development. New training methods and tools may be needed to ensure high-performing vertical leader teams that can meet demanding performance requirements. In working with new doctrine, organizations and equipment, leaders and soldiers in the first IBCT can shed light on selection, training, and leader development issues that the Objective Force will likely encounter.

The reader will find leadership, leader training, and leader development as dominant themes in this report. Leadership will remain central in building and coordinating vertical leader teams and in sustaining their effectiveness under the strain of combat. Commanders will retain their role as the principal leaders and the overarching purpose of vertical teams will be to support and implement their commanders' shared vision. Staff officers and non-commissioned officers play important leadership roles as well. Accordingly, the authors use a broad definition of "leaders" to ensure that the complete needs of vertical teams in the Objective Force are considered.

The Center for Army Leadership (CAL) has recently advanced the support of vertical team training by developing the Leader Sustainment Training Program (LSTP). Specifically designed for IBCT leader teams, the LSTP consists of a library of "vignettes" designed to develop adaptive leaders at brigade, battalion, company, and platoon levels. Each vignette is a self-contained exercise that challenges the participants to apply initiative, adaptability, and creative problem solving. The vignettes are designed to train technical, tactical, interpersonal, and conceptual skills. Minimal resources are required to plan and conduct the exercises. The IBCT is using vignette-based training for leader and vertical leader team development and has experimented with the methodology to simultaneously conduct horizontal battle staff training.

The vignettes were the brainchild of MG James Dubik, the first TRADOC Deputy Chief of Staff for Transformation and Chief, Brigade Coordination Cell (BCC). He conceived the idea of developing special multi-echelon training exercises to prepare IBCT leaders and leader teams for the challenges of their newly formed units. To obtain full involvement of TRADOC proponents and to assure conceptual consistency, MG Dubik insisted on full participation of the Army branches concerned with the IBCT and on CAL's overall supervision of the developmental work.

The vignettes' chief features are their emphasis on out-of-the-ordinary situations and their sequential involvement of overlapping leader teams. Each vignette-based training session calls for innovative problem solving and initiative in the absence of clearly defined doctrinal solutions. Each brings together three levels of command—the directing commander, his immediate subordinates and the next level of leaders (the subordinates' subordinates). This grouping changes and overlaps as the training progresses from higher to lower levels of organization. Chapter 3 provides greater

detail on this contemporary training technique (see the *Vignette Based Training for Vertical Leader Teams* section). Appendix E contains two representative vignette training guides.

MG Dubik's original design called for each level of command in the IBCT to train sequentially over a five-day period, beginning with a brigade exercise and ending with platoon level events across the whole brigade. This design stressed continuity along the vertical axis of Army organization and cultivation of mutual understanding between levels of command. As it turned out, the training took place after MG Dubik's departure from the BCC, and the implementation differed from the initial plan. Nonetheless, the IBCT maintained the fundamental focus on multi-level vertical leader team training with participation of three levels of organization.

This project explored the selection, training, and professional development requirements for IBCT vertical leader teams. Researchers concentrated on vignette-based training, but also observed other training and included a wide variety of past experiences in their interviews with IBCT leaders and trainers.

Problem Statement

The Army must prepare now for the leader training and leader development challenges that will accompany the transition to the Objective Force. As transformation progresses, significant changes are occurring in each of the six readiness domains—doctrine, training, leader development, organization, materiel, and soldier issues (DTLOMS). Much has already changed in the form of new doctrine, combat organizations, and advanced tactical equipment now embedded in the IBCT. There is a need to ensure that advances in doctrine, organization, and materiel are matched by similar gains in training, leader development, and soldier issues.

The Army's capstone document for the Objective Force (U.S. Army Training and Doctrine Command, 2000) sets the tone for the challenges that lie ahead:

> The demands of operating in the future distributed and non-linear battlespace will place greater responsibility on leaders and soldiers at all levels. Success will demand leaders with mature judgment who can operate in an environment of uncertainty with courage, initiative, and aggressive resolve. Requirements for soldier proficiency will increase in many areas. The Objective Force soldier will perform many more varied and complex tasks, and units will function more autonomously, necessitating individuals who are not only multi-skilled but also multifunctional thus providing operational redundancy across the Force. Leaders and soldiers at all levels must become highly adaptive, mastering change rapidly, while competently employing a wide range of new technologies, particularly in the arena of Information Operations (IO). Comprehensive training requirements for a full spectrum Objective Force will be greater than the already heavy burden that exists today. The Objective Force requires training capabilities, resources, and effective management that will ensure dominance across the full spectrum of conflict. (p. 37)

Vertical leader teams in the Objective Force must exploit the capabilities of advanced doctrine, technology, and improved organization to achieve full combat potential. Because success will depend on the abilities of leaders to think creatively, decide promptly, exploit technology, adapt readily, and act as a team, the Army needs effective methods of ensuring that future leaders and vertical leader teams possess these qualities. Selecting warfighters with the right qualities, training them for multifunctional performance requirements, and continuously developing their professional competencies will all demand reconsideration of leader training and doctrine. The current project was initiated to begin gathering the information essential to that assessment.

Project Objectives

The goal of the work reported here was to establish an initial knowledge base regarding selection and training of future leaders and the development and training of effective vertical teams. The project's technical objectives were to:

- Determine training issues for leaders and vertical teams relevant to the FCS and Objective Force.
- Identify training techniques, methods, and problems in training leaders and vertical teams.
- Identify the KSAs future leaders should possess to perform effectively.

CHAPTER 2. METHODS

Researchers established a knowledge base for this report in two stages. First, they captured insights from warfighters and support personnel working in the IBCT environment by using structured interview and observation techniques, and studied Army documents describing the organization, capabilities, and operational environment envisioned for the Objective Force. The focus was on identifying leader and vertical team training issues, training methods and techniques, and KSAs necessary for successful operations. In the second stage, subject matter experts (SMEs) analyzed the IBCT data to project current dimensions into the future force environment. Non-quantitative methods were employed for reducing and analyzing the information gathered in the interviews, observation sessions, and document reviews.

Data Collection Procedures

Interview Procedures

The team's on-site SMEs interviewed selected leaders, soldiers, and training support personnel at Fort Lewis from May 2001 through September 2001. Table 1 shows the personnel from each category who participated in the interviews.

The on-site SMEs served as interview facilitators. They used a standard interview guide that was pilot tested during preliminary interview sessions and revised to produce the final guide (Appendix B). Individual sessions were conducted one-on-one while group interviews were

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conducted by one or both SMEs. Interviews were tape recorded for preparation of written summaries. Each session lasted approximately two hours.

Table 1

List of Interviews Conducted by the Team

Participants	Comments
IBCT Warfighters	
Brigade Commander	Informal session (loosely structured)
Battalion Commanders (4 ea)	IN, FA, RSTA*, formal and informal sessions
Battalion Executive Officer (3 ea)	Infantry, Support
Company/Battery/Troop Commanders (4 ea)	Infantry, RSTA, and Support
Platoon Leaders (2 ea)	Infantry, Support
Digital System Operators (4 sessions)	Group Sessions, 4 operators in each session
Transformation SMEs	
I Corps Leaders (2 ea)	Deputy CG for Training & Readiness; G3
U.S. Army TRADOC Principal	Deputy CG for Transformation
Brigade Coordination Cell (2 ea)	Dir, Battlespace Integr; Dir, Battlespace Trng
Mission Support Training Facility Ldrs (2 ea)	Chief; Operations Officer
IBCT Trainers	
Battalion Assistant S3-Training Officers (2 ea)	Infantry, RSTA
Brigade Coordination Cell	Training NCO
Mission Support Training Facility Staff (2 ea)	Training Officer; Training NCO
Digital Battle Staff Trainer	Training NCO

* RSTA = Reconnaissance, Surveillance, and Target Acquisition

The interviews probed the operational experience of IBCT warfighters and trainers with emphasis on critical tasks and how they differ from those in an analog unit. Interview questions were designed to capture opinions and insights regarding leader team training, selection factors, and professional development. A summary of each interview session was prepared, reviewed, and edited to produce an accurate record. The interviews concentrated on:

1. Critical tasks and their relation to unit missions.
2. Activities (e.g., steps) essential for performing tasks effectively.
3. Leader and soldier enablers (knowledge, skills, aptitudes, attitudes).
4. Training requirements to support individual and team proficiencies.
5. Specific training techniques, procedures, and methods for effective team performance.
6. Training support (e.g., simulations, after action review [AAR] capabilities) required for the Objective Force.
7. IBCT lessons learned for training methods and warfighter selection/utilization.

Observation Procedures

Two SMEs served as the principal observers at Fort Lewis. The senior observer was a retired artillery colonel with over 20 years of active duty experience, including involvement in the Army's earliest efforts to digitize command and control. The second observer was a retired Infantry Sergeant Major who had worked closely with the IBCT collecting lessons for the Center for Army Lessons Learned (CALL) before beginning work on this project. Project-specific training included reviewing past ARI studies, collaborating in the development and pilot testing of the data collection instruments, and receiving informal instruction from the project senior scientist.

Observations of vertical team training occurred during two different types of events: vignette-based training conducted as part of the IBCT's LSTP and progressive battle staff training culminating in the IBCT's Warfighter Exercise (WFX). The vignette-based training focused on vertical leader teams. Training objectives for Warfighter preparation extended beyond vertical team proficiency to include, for example, ABCS system operator proficiency and horizontal teaming. Table 2 lists the training events that were observed between June and September 2001. The team's two on-site SMEs observed the events on a sampling basis aiming for high-payoff opportunities. During each event, SMEs spent time unobtrusively with the entire training audience, typically requiring that they rotate among several nodes.

A standard observation guide was developed to structure the SMEs' monitoring activities and to facilitate the capture of notes and insights. The guide included background and procedural information as well as dimensions of interest to focus the observers' attention. The focusing dimensions were built around the primary aspects (explicit and implicit) of the project's technical objectives—training requirements, training techniques/methods, and KSAs—as they might be observable in IBCT training events. The observers pilot tested the guide during early observation sessions and revised it to produce the final instrument (Appendix C).

Table 2

List of Unit Training Events Observed by the Team

Events	Observed
Brigade Level Vignettes	On-hand training audience (2 sessions)
Battalion Level Vignettes	On-hand training audience (5 sessions)
Company Level Vignettes	On-hand training audience (4 sessions)
Platoon Level Vignettes	On-hand training audience (3 sessions)
Battle Staff Training	Brigade focus; 3 of 8 days of training in MSTF*
Focused Multi-Echelon Training	Brigade and battalion; 3 of 5 days of training
Brigade CPX (Command Post Exercise)	Brigade training audience; 3 of 5 days of exercise
Warfighter Preparation (Mini-Exercise)	Brigade and battalion; all 4 days of exercise
Warfighter Exercise	Brigade and battalion; all 4 days of exercise

* MSTF = Mission Support Training Facility

Document Review

The team reviewed Army literature relevant to the Objective Force. The selected documents (see References and Appendix D) dealt with Force XXI operations and training, future force concepts, Army transformation, adaptive leadership training and innovative approaches to staff training. The SMEs reviewed the references to determine future leader and vertical team tasks and skills, and to identify concepts and common threads pointing to leader selection and training requirements. The intent was to integrate the document-based information with the data gained during the interview and observation sessions.

Data Analysis

The SMEs used non-quantitative methods to analyze the assembled data. They translated and integrated statements, insights, and conclusions drawn from interviews, training observations, and document review having specific relevance to the project's questions of interest. Judgment and interpretation by the SMEs was key throughout data analysis to resolve inconsistencies and to determine what was important and germane to the project. The resulting collection of insights and conclusions was reviewed, discussed, and analyzed by the project team (the on-site investigators, a senior military analyst, and a behavioral scientist) to arrive at consensus.

CHAPTER 3. FINDINGS AND DISCUSSION

> Great leaders produce great subordinates, who, in turn. become great leaders in their own time... The single most important contribution we make is in developing our subordinates. Our enduring legacy to the Army and the nation is the training of tomorrow's leaders.
>
> Sullivan, 1995, p. 71

Future Forces Leadership Environment

General

Strong leadership has historically differentiated armies. The U.S. Army has long recognized leadership as the leading factor in a very short list of the elements of combat power. Leadership will remain vital even under radically changed circumstances of the future.

Army leadership doctrine has rightly stressed the role of the commander. Capable *leader teams*, however, have also been essential to successful fighting forces. Cohesive and effective combination of command and staff talents at several coordinated levels of organization—vertical leader teams—has given the U.S. Army the edge in many of its operations. High performing units like the 4th Armored Division and VII Corps of World War II and the 1st Cavalry Division of the Vietnam War were characterized by excellence of internal cooperation, originating with commanders but embraced by the entire vertical team. The cooperation and needs of this broader

group of leaders consisting of commanders and staff leaders at multiple echelons remain central facets of vertical teams.

As the modes of combat change, specific vertical team qualities and traits have become more or less important. Generally the trend line of the past two centuries has headed toward decentralization of leadership as tactics dictated more dispersion. Commanders at all levels have had to visualize events over longer times and greater spaces and have had to judge transient conditions and act decisively on incomplete information. Their cooperation, based on broad, shared understanding of goals and tactics and on necessary distribution of authority to act independently within the context of a common plan, has been essential to winning.

Under the influence of more effective weapons, the massed brigade formations of the American Civil War gave way to smaller and smaller combat groupings over the years. Improving communications allowed for better coordination of action. Small unit leaders have had to act with greater and greater independence with each expansion of tactical areas and with each technical advance. Larger unit leaders responded to these conditions by providing a unifying concept to their forces, by leading from the front where they could consult with and direct subordinate leaders most effectively, and by providing increasingly well coordinated applications of combined arms.

Better situational awareness, precision weapons, and improved communications began to offset the wide dispersion of combat power and to change the nature of vertical cooperation in the 20th Century's last decades. Greater understanding of conditions and unit location increasingly enabled commanders to confer more easily, to coordinate their actions with greater effect and to integrate fast, accurate point and wide area weapons into the close combat operation. Today's battlefield conditions are stimulating reconsideration of the balance of centralized and decentralized actions within the vertical team. The need remains to understand causes and effects, to analyze complex situations and to make timely, effective decisions if future commanders are to meet the Objective Force's vision to "see first, understand first, act first, and finish decisively" (U.S. Department of the Army, 2001a).

During Army transition, vertical leader teams will contend with both continuity and change. Some basic team tasks will remain while others will shift dramatically.

Continuity

Some of the conditions of the future will resemble those of today. Army leaders will face a broad range of threats and missions. These will range from short notice missions to long foreseen, deliberately planned operations. Vertical leader teams of the future will have to anticipate conflicts across the full spectrum of possibilities—everything from peacekeeping to counterinsurgency to general war. Training leaders and leader teams for these conditions will have to aim for general proficiency in basic operations while providing for focused and intensive training as specific crises develop.

The U.S. strategic position will subject vertical teams to worldwide operations. With a handful of other powers, American forces will have to train, organize, and equip themselves for operations in any conceivable geographical setting under any possible set of climatic and

environmental conditions. Understanding the setting will be better than in the 20th Century when a series of unexpected events forced the Army into unfamiliar surroundings, but the realm of possibilities will be as broad as it is now.

As in current operations, Army vertical leader teams of the future will consist of members of both the Active Components (AC) and Reserve Components (RC). These teams will commonly be augmented with uniquely qualified personnel. Specialists in languages, cultures, environmental conditions, civil affairs, and technical matters will join units on short notice or in the midst of operations and will have to be made productive without delay. This will create new dynamics between echelons of organization and new functions that require coordination within the overall operation. Leader training will have to develop strong, flexible organizational skills and the ability to integrate new members into functioning leader teams before and during operations. This also suggests the need for a comprehensive integration protocol for new team members to ensure their rapid assimilation.

Experience in recent operations (e.g., Haiti, DESERT STORM, Kosovo and Bosnian peacekeeping) shows that AC and RC elements can cooperate well if they are given time to prepare and to train together. In future operations these associations may be formed on shorter notice, last for shorter periods, and require more frequent reorganization. If that is the case, leaders will enter and exit vertical teams more quickly and more often than they have in the past. In such circumstances the elements of cooperation, coordination of efforts, mutual understanding, and professional confidence will be affected. Uniform leader training and understanding of doctrine will help counteract turbulence in leader teams, but some loss of coordination and mutual understanding must be expected. Training that accustoms AC and RC leaders to this turbulence will be important and should take place in both components regularly.

Replicating this condition would add cost and complexity to training. It would, for example, cause AC leaders to appear in greater numbers for RC Inactive Duty Training (IDT, in the form of monthly drills) and Annual Training (AT, typically for two weeks) for the purpose of intermittent participation in their training. On the RC side, this would require leaders to use scarce training days to take part in Combat Training Center (CTC) and home station training of AC units in greater numbers. Distributed training—leaders participating via telecommunications only—may simplify this sort of teaming and reflect the reality of future C4I.

Army operations will continue to be part of fully integrated joint operations. Future joint action, however, is apt to involve more junior leaders in direct cooperation with elements of other services than is now the case. Also, joint doctrine will almost certainly have progressed from its present general and non-prescriptive condition and will impose more specific tasks and limits on elements of the Army or ground component. Army commanders and staff leaders will be expected to function smoothly in joint teams. It is desirable, therefore, that future leader training include elements of joint operations at a lower level of organization than is now common. Leader teams from colonel level (current brigade or regiment) may be expected to participate directly in joint organizations and must therefore be exposed to that experience in their training and education.

United States forces will probably retain the ability to dominate aerospace, sea space, and much of the infosphere. They will be able to deploy significant fighting formations relatively

quickly and to commence combat before deployment is complete. However, all combatants—enemy as well as friendly—will employ wide-area and precision weapons that can rapidly incapacitate ports, urban areas, command and signal nodes, and units. In these circumstances, the Army's vertical leadership teams will have to manage and direct forces that expand quickly, bringing new leaders into the team as operations progress.

To meet this need, leader training will have to represent this expanding/contracting reality early and consistently in order to supplant the existing bias toward stable force structure by Table of Organization and Equipment (TO&E) with a mentality more akin to the German "Kampfgruppe" of World War II or the U.S. "battle group" orientation of the late 1950's. Field training and school exercises will have to stress evolving organizations and the ability to employ a force that changes in structure from day to day. The object of this training would be to accustom leaders to functioning in changing vertical leader teams. Specifically, it would concentrate their attention on building the technical and human skills (e.g., orienting new members, transferring responsibilities when participants depart, modifying databases to maintain currency) involved in altering leader teams with minimal loss of combat potential.

Conventional and irregular indigenous forces will also continue to be present in many operations and may have already begun fighting, thus setting some of the operational terms before U.S. Army commanders can influence events.

Future leaders will still enjoy the advantage of reliable global communications. Today's military signal structure is evolving into a dependable, flexible, high capacity communications system. Already under construction, that system will support command and control communications and staff information needs without interruption from mission alert through deployment and into fully developed combat. The system will facilitate teamwork but will also allow individual commanders and staff leaders to obtain information independently.

Despite the goal of continuous global connectivity, the system will remain subject to attack for as long as the enemy retains fighting capability, and future vertical teams will have to be able to switch quickly between fully-supported and temporarily impaired battle command operations. Training for synchronized action and close cooperation within the vertical team with and without full use of these means will require attention. Leaders will need the trained capacity to function effectively in close coordination with teammates and separately in periods of isolation.

Combined operations are likely to remain the norm. While the U.S. will occasionally act independently, it will more commonly fight with foreign partners. These contingents will include both familiar teammates and new ones. Their troops will present a widely varying level of technical sophistication but will augment U.S. Army abilities with their unique strengths. Integrating foreign military leaders into the vertical leadership team from component command down to small unit level will complicate coordination. Foreign military leader preparation, practices, and values can be expected to differ from ours and will require U.S. Army leaders capable of understanding the differences and rationalizing them to generate the greatest possible combat effectiveness in the force as a whole. This implies frequent training contacts with other armies, a characteristic of North Atlantic Treaty Organization days that has, since the Cold War's end, atrophied to some extent.

High level national and coalition authorities will have better knowledge of military events and greater capacity to coordinate them with other elements of national power. Like the commander in the fight, political leaders will be subject to continuous public scrutiny and to daily pressures from other nations' leaders. For the Army commanders this means that future strategic direction will have the potential to alter operations quickly and fundamentally. Committed commanders will have to operate with the understanding that time available and strategic objectives may change suddenly. As a consequence, their vertical teams will have to be ready to conclude or extend operations on very short notice.

This means that commanders and their leader teams will have to approach their missions and their training very flexibly. Characteristically, unit training ends neatly on the objective at about the time expected. If training is to prepare leader teams for the possibilities of suddenly truncated operations (e.g., DESERT STORM) and unexpected extensions (e.g., Kosovo), then it should feature unforeseen changes. Requiring leaders to bring their operations to a rapid halt on the best terms obtainable or to extend their efforts beyond the initial assumptions of their plans will help prepare leader teams for these complicated tasks.

Such training would force leaders and leader teams to confront issues of rapid termination. Such issues could include choosing realistic and supportable final dispositions, accelerating the movement of parts of the force and defeating stubborn opposition in detail within tough time constraints. Similarly, training for unforeseen extensions to operations would raise difficult questions of sustaining logistical support, maintaining tactical momentum, and continuing to fight a tired and partially depleted force. The leader tasks related to these conditions would include communicating in time to act, maintaining coordination in spite of curtailed or extended missions, re-positioning command nodes, and planning dynamically with the aid of advanced tools.

Finally, future vertical leadership teams can expect the same close coordination with non-military participants that has characterized recent operations. They will have to be prepared to adapt their activities to take advantage of cooperation with civilian authorities and private entities that play a role in the conflict. Training vertical teams to incorporate non-governmental and private voluntary organization (NGO/PVO) elements—permanently or temporarily—will be part of the training challenge.

Change

Leaders of the future will confront substantial change that may force adoption of wholly new forms of command and methods of control. Better information support and more rapid data collection may make the dominant battlespace awareness–precision engagement goals of system-of-systems advocates obtainable (Owens & Offley, 2000). The complete effect of this change is difficult to foresee in detail, but a few features seem certain. Future forces will operate across the full spectrum of operations. This will involve emphasizing tactical agility and shifting from stability and support operations (SASO) to combat missions as necessary. Conventional combat operations will take place in non-contiguous and distributed theaters. Units will possess radically different fighting capabilities. Robotics and artificial intelligence will be regular components of the fighting force. Directed energy weapons, nanotechnology-based systems (e.g., advanced air and ground sensors), and biotechnical soldier aids (e.g., sensory amplifiers, pharmaceuticals) are all likely to

appear. So are new area denial weapons (such as "intelligent" mines), antimaterial agents (compounds that attack metals, plastics, etc.), and novel toxins.

Future leader teams will plan and coordinate their operations with substantially different battle command means. These may differ from the present ABCS automated tools as much as the ABCS tools differ from their analog predecessors. Information collection, distribution, and decision cycles will increase in speed, supporting faster decision cycles, inter-echelon collaborative planning, and broader participation in decision-making by all commanders. Automated data and information sorting tools will simplify dealing with this deluge of information but the idea of a stable, lasting estimate of the situation will surely disappear. Roles within the command and staff elements of the vertical team are likely to change in this environment with some positions becoming more important as others become redundant.

Where vertical leader team development is concerned, changes in information distribution and access to new processors and global communications are likely to call for broad reorganization. The basics of command—building blocks like command responsibilities, span of control, mission and directive orders, decision support tools, codified staff responsibilities, and the roles of leaders at differing echelons—may change fundamentally. Virtual rehearsals, execution-centric (vs. plans-centric) operations, and true battle command/situational awareness on the move are goals for the Objective Force.

Virtual rehearsals will allow leaders to prepare actions in detail without confronting the time-distance difficulties in holding commanders' meetings or consolidated staff huddles where participants' physical presence is required. Multi-party video teleconferencing supported by advanced staff aids, computer graphics and tactical simulations will support better preparation than voice-only conferences of analog leader teams. Virtual rehearsals will allow leaders to consult freely at any time and to game competing courses of action using accurate strength data and images of areas of concern. This rehearsal-based understanding of friendly and enemy options will create an intermediate level of planning between today's deliberate and hasty "frag-order" processes. Virtual rehearsals create the potential for better coordination of extended operations without pausing for extensive planning. Coupled with improved decision speed, this capability represents a considerable tactical advantage for Objective Force vertical leader teams.

Execution-centric operations differ from plans-centric operations in a similar way. They stress greater freedom of action by subordinate leaders within the context of the commander's basic plan and greater use of mutually understood variations from that plan. If leaders throughout the vertical chain understand the commander's overall intent and preferences as the operation unfolds, they will, as a group, anticipate and react to changes in the tactical situation without the need to resort to a new cycle of planning.

Staff support will remain important in execution-centric operations. Rather than preparing plans for a distinct subsequent phase of the operation, staff leaders will use their C4I means to provide a continuous estimate of the situation within their specialty areas. Cooperating between echelons, staff leaders will support a series of maturing options by positioning force assets (command nodes, combat multipliers, supplies and services) to anticipate needs and sustain the continuity of operations.

Full situational awareness for commanders on the move should eliminate leader dependence on command posts. Objective Force commanders will be able to see any aspect of their situation while moving or while operating well away from their headquarters. New communication devices, improved staff tools and simulations, and greater signal bandwidth underlie this capability and will help staffs keep their commanders fully informed from a distance. The net effect of this will be to give leaders full freedom of movement without loss of situational awareness.

Command of a task-specialized, widely distributed fighting element that is interdependent with others and capable of changing its content without ceasing operations will be different. Leaders will need to be multifunctional—capable of performing competently in several functional areas. "Command" itself may not be as appropriate as local authority with license to task a broad set of joint force capabilities. The established idea of a unit staff may disappear in favor of a generalized information and decision support apparatus.

If so, then leaders and leader teams of the near future will have to be adept at orchestrating the efforts of a changing set of actors and of integrating supporting capabilities quickly for short and long duration. This calls for broader knowledge and skills than are now prevalent. It also suggests that more experienced leaders (e.g., majors in place of captains) may be necessary in future organizations. Leader development and training would be strongly affected by such adjustments.

More fundamentally, basic combat relationships may also change. Advanced weapons may generate new fighting combinations requiring altered organizations, novel crewing, new leadership and training techniques, and perhaps changes in the Army's branch organization. Just as armored fighting vehicles, aircraft, and radios eventually coalesced into a new and dominant tactical combination, so too the emergent intelligent weapons, computerized decision aids, information tools, and global intelligence collectors are likely to fuse into something quite different from the 20th Century's combined arms warfare. The IBCT experience is too new to justify broad generalization. Still, the inappropriate use of the RSTA squadron by other units suggests that a large part of the leadership will have to be trained to assure full exploitation of future capabilities even if those are only present in a few units.

Better communications and situational understanding will also make dynamic teaming and "plug and play" task organization possible across the whole fighting element. Improved situational understanding and communications may even support the elimination of some of the traditional Army fighting structure. If the corps, brigade, or battalion level of organization were to prove unnecessary, for instance, the redistribution of command and staff responsibilities and new techniques for cooperation and coordination would require considerable change to leader development, battle command doctrine, and training. For example, if corps directed the actions of brigades without the intermediary supervision of divisions, staff leaders would have to supervise a greater number and variety of actions and would be expected to understand a larger range of tactical details.

Innovative and adaptive enemy opposition will also prompt force designers and doctrine writers to re-evaluate leader development and training requirements. Future vertical teams will face enemies who avoid direct confrontation and take on forms that are hard to discern and hit. Operating on the boundaries between military action and criminal activity, these enemies will

compel the Army to select, prepare, and employ commanders and staff leaders differently. The vertical leadership team of the future may incorporate civilian agency chiefs and subordinate military leaders to civil organizations. Training and leader selection will both have to reflect those conditions.

Training leaders to defeat adaptive enemies will mean preparing them for a broader range of enemy actions in multiple geographic and demographic arenas. Automated staff aids, terrain modeling, historical data, artificial intelligence (AI)-assisted analytical tools, and pattern analysis capabilities may assist leaders in meeting this challenge, but preparing leaders to defeat enemies as different as terrorists, guerrillas, and conventional forces will be difficult in any case.

Extended, immersive leader training is one approach to this problem. Army leaders have long considered dedicating more leader time to tactical proficiency through intensive professional education, more unit-based training and new self-development programs supported with sophisticated instruction and training aids. Observation of the IBCT, however, suggests that gains made in this way will be modest because of demands on leader time by other activities. In practice, leader training does not compete favorably with other requirements. New and innovative support to unit leader training and leader self-development would certainly enhance leader skills, but they promise change on the margin, not fundamental improvement.

The Army has generally resisted another approach called "tiered readiness"—the staged preparation of some units for full readiness at the cost of maintaining most of the force at lower levels. Colonel Douglas MacGregor's book, *Breaking the Phalanx* (MacGregor, 1997), argued for that system and was implicitly rejected by the Army. Nonetheless, tiered readiness is used in the Ranger Regiment and the U.S. Marine Corps and offers some advantages in leader training. Deliberate preparation of leaders for a limited period of full readiness would allow the Army to concentrate efforts on preparing those junior leaders for a more complex opposition in a few specific theaters.

In the future the problem may become more acute. It is likely that Objective Force leaders—faced by innovative enemies and responsible for exceptionally powerful systems, large areas, substantial missions—will have to be more senior than present company grade leaders. Objective Force entities, though they may not be much larger than companies, may require field grade leadership and a larger proportion of senior Non-Commissioned Officers (NCOs) than traditional companies. If that were the case, then professional development for junior officers and NCOs would have to change substantially. This would mean developing junior officers and junior NCOs through repeated small unit assignments within the Objective Force or, less attractively, preparing them academically for years before assigning them to those forces.

Table 3 distills the foregoing discussion to profile the leadership environment of the current versus future force. The eventual characteristics of the Objective Force will heavily shape the roles that leaders and leader teams will play on the future battlefield. It will be important to update this profile as the Army's transformation efforts lead to revision of operational and organizational concepts for the Objective Force.

In summary, future Army leaders will operate in an environment similar in many ways to today's turbulent conditions. New conditions and opportunities will also exist, however, and to assure continuing battle dominance the service will need to train leaders who can combine new and traditional weapons, tactics, techniques, and C4I means effectively. Concepts for the Objective Force suggest that leaders will provide the intellectual component of a more agile force (U.S. Department of the Army, 2001a). Anticipating and providing for tomorrow's training requirements is key to realizing the vision of the future force.

Table 3

Characteristics of the Leadership Environment, Current versus Future Force

Dimension	Characteristics	
	Current Force	Objective Force
Mission Cycle	Predictable, criterion-based	Unpredictable—truncated or extended
Overlap of Operations	Deployment, then combat	Overlapping deployment and combat
Task Organization	Limited flexibility	Reconfigurable (plug-and-play)
Unit Dispersion	Proximate, contiguous	Widely dispersed, non-contiguous
Equipment Mix	Predictable, relatively uniform	Unpredictable, diverse
Use of Unmanned Systems	Limited mainly to UAVs*	Extensive intelligent/robotic systems
Chain of Command	Traditional, linear	Non-traditional, skip-echelon
Leader Team Membership	Single-service focus	Joint, coalition, diverse
Leader Team Stability	Relatively stable	Variable, reconfigurable
Battle Command	Limited-mobility command posts	Command and control on the move
Decision Framework	Plans-centric, centralized	Execution-centric, decentralized
Planning Process	Hierarchical, sequential	Collaborative, concurrent
Preparation Tools	Physical rehearsals	Virtual rehearsals
Estimate of the Situation	Phased, discontinuous	Continuous
Information Access	Controlled, gated	Continuous, global
Interpersonal Interaction	Face-to-face, voice	Routine interaction via tele-media

* Unmanned Aerial Vehicle

Fundamentals of Future Force Leadership

The fundamental values and characteristics that the Army now requires of its leaders will remain after transformation. Technological advances will affect leadership techniques and must be optimized for best effect, but they will not change the essence of leadership. This study concludes that, while the collaborative decision-making process enabled by digital C4I systems is highly advantageous, it does not diminish the need for strong leaders and capable chains of command. High-performing vertical leader teams directed by competent commanders will remain vital to battlefield dominance.

Interviews with IBCT warfighters, technical experts, and senior commanders produced the following key insights:

- "The new technologies are tools. They don't produce knowledge. That comes as a result of the interaction of intellect, experience, insight, and the flash of brilliance that comes from an able commander." (General Officer)
- "What we require of leaders hasn't changed. Even with perfect, real-time intelligence, the Common Operational Picture can only show what is, not what should be. It still takes a big, tough, smart person to be in charge and lead from the cutting edge. It still takes human intellect to make the leap from situational awareness to understanding." (Digital Systems Trainer)
- "The complexity of this business has dramatically changed but the basic skills of leadership have not. An officer must first be tactically and technically proficient... able to think critically and rationally under pressure and be able to motivate and inspire his subordinates. He needs to be an excellent trainer. These things have not changed, nor will they." (Battalion Commander)
- "Make no mistake—the products and speed gained through technology are truly powerful. Our ability to see the battlefield and make faster decisions with far greater precision is coming. All that makes a good leader better, but it doesn't make a good leader." (Battalion Commander)
- "The traits, characteristics, and skills needed in a digital environment are exactly the same as needed in an analog environment... Maintain the leadership culture and warrior ethos in the Army and do not substitute technical knowledge for leadership. If the leader comes with both, fine, but of the two, leadership carries the far greater weight. The Army is about leading people and it is leadership that creates the conditions for soldiers and units to be successful." (Company Commander)
- "The infusion of new technology and its impact on tactics, techniques, and procedures and doctrine is nothing new. Its been going on for centuries with the discovery of the crossbow, the advent of gunpowder, the development of tanks, aircraft, and the atomic bomb. Every new technology brings change to fighting unit formations, equipment, doctrine, and tactics. But through it all the qualities of effective combat leadership have not changed. What changes are the words we use to describe it. Adaptiveness and flexibility are in vogue these days. I can't think of a single winning commander anywhere in history where those terms would not apply. Is this latest technology likely to result in a paradigm shift for leadership? No way." (Sergeant Major)

Expected Challenges

New operational challenges are emerging. In the operational environment of the Objective Force, vertical leader teams will face relatively new or unique challenges. The IBCT is now encountering some of these challenges for the first time. Others have emerged in the operational environment within the past few years. Major factors likely to shape the operations of the future include:

1. Short notice mission assignments and quick transitions from peace to combat.
2. Rapid deployments that pass very quickly from in-theater staging to actual combat.
3. Non-contiguous, widely distributed operations that separate leaders from their subordinates and superiors by considerable distances.

4. Novel and changing task organization that places commanders under unfamiliar leaders and puts them in charge of new subordinates.
5. Direct subordination of smaller Army units (brigades) to joint or combined headquarters, either temporarily or for extended periods.
6. Voluminous information flow into the theater and the unit.
7. Periodic interventions into lower level command nets by higher-level commanders who will have the ability to track the movements and status of companies and battalions.

Existing leadership challenges will persist. Some of today's common leader challenges will confront vertical teams in the Objective Force. These challenges stem from force configuration and staffing practices as well as realities of the modern battlefield. Chief among them are:

1. Short-notice replacement of familiar leaders with new ones because of casualties or other unanticipated conditions (e.g., non-deployability, reassignment, non-battle injury, and other causes).
2. Attachment of new units to the formation or detachment of some units.
3. Alteration (and potential disruption) of trained leader teams by the addition of new members (e.g., area or topical specialists; representatives of other services, nations or civilian agencies).
4. Integration with differently equipped units (especially less capable battle command capabilities).
5. Locality factors including adaptation to terrain, weather, the population, unfamiliar friendly forces and new enemies.
6. Soldier access to external information that will require commanders to counteract false reports and misconceptions with active internal "command information" efforts.
7. Obstacles to leader training in the form of competing priorities, scheduled training interruptions and lack of clear standards.

Training Issues for Leaders in the Objective Force

This project examined IBCT training in light of concepts for the Objective Force to determine training issues relevant to future leaders and vertical leader teams. This section presents the findings derived from the team's understanding of Objective Force concepts and the IBCT training it observed.

During the project researchers gathered a considerable amount of information that relates to the Army's program for leader development described in DA Pam 350-58 (U.S. Department of the Army, 1994) and pertinent to the findings of the Army Training and Leader Development Panel (ATLDP) report (U.S. Department of the Army, 2001b). Some of those findings are presented in this section, but more have been recorded in Appendix A in order to maintain the Objective Force focus of this report.

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Structured leader development programs should be standards-based. This finding supports the development of structured programs with specific learning objectives for unit-administered leader development and for individual leader self-development.

Structured leader development programs in the Army are those taught at the institutional training facilities where learning objectives are clearly defined and training is standards-based. Otherwise, leader development is unstructured and there are no uniform terminal learning objectives. This lack of structure and clear learning objectives results in widely dissimilar leader development programs from unit to unit. Lacking structure, neither the unit commander nor individual leaders have the necessary "road map" to guide the development process. Without learning objectives and standards, neither has the mechanism to determine whether a leader development event or program achieved its purpose.

The paragraph that follows suggests how structure and learning objectives might be implemented in an existing professional self-development program. It also illustrates that structure allows the creation of performance requirements and standards that can be adjusted to learner needs. The Army Chief of Staff's recommended professional reading list provides the example.

The Chief of Staff's recommended professional reading list is available on-line. The books are not. For each title a brief description is provided that contains information about the book's content and why reading it is worthwhile. The latter could easily be expanded and restated as learning objectives. To a degree, structure for the reading program is provided because it is broken down by grade. The titles could be further organized in a progressive order where one reading expands upon the previous one, presenting an opposing view or reinforcing important concepts. Organized in this fashion, the individual (and his commander) would have a "road map" that describes a sequential professional reading program against which progress can be measured. Structure in the form of study guides might further increase the value of this leader development tool. These, along with the books themselves, could also be made available on-line. Specific performance requirements might be added by making the professional reading program mandatory instead of recommended and by providing feedback to the soldier and his commander.

Transitioning to more structured leader training may encounter resistance. Long-held attitudes and beliefs about the unit-specific and individualized approaches to leader training could work against efforts to build greater structure into leader/leader team training programs in units. In particular, efforts to develop a more structured approach and/or establish standards for leader training might encounter reluctance and even hostility in some quarters. Adding structure and standards would help remove leader training from the "discretionary" column of things to do and put it solidly into the "required" column. If this were done, the Army would have to provide clear performance standards. This would entail accountable instruction, external program evaluations, and, perhaps, the use of performance data in assignments to leadership positions. All these run counter to the Army culture and could only be implemented by determined high level leadership.

The ability to communicate effectively will emerge as an increasingly important leader skill. Future force commanders will enjoy the benefit of better and faster means of communication, with expanded options. The family of increasingly reliable, easy to use digital C4I systems will provide nearly instantaneous communication of data, text, and graphics. Near-term adoption of video telecommunication and teleconferencing technologies promises to make remote, dynamic interaction routine for multiple echelons of command or dispersed elements of the same command. These technologies enable the emergence of a parallel and collaborative decision-making process as the likely successor to the traditional hierarchical, sequential model (Dudley, Johnston, Jones, Strauss & Meliza, 2001).

New telecommunications facilitate the dispersion of units across extended battlespace called for in both IBCT and Objective Force concepts. Paralleling this trend is a new emphasis on trained, mutually confident vertical leader teams that plan, rehearse, and control their operations electronically to a far greater extent than is now the case. The common thread in all of this—the exploitation of new technologies, the application of new doctrine, the increased reliance on high performing vertical leader teams—is that each places new demands and importance on the leader's ability to communicate effectively with a distributed vertical leader team. The advantages and techniques of in-person interactions will be absent. Commanders will need deliberate training in the art of effective distant or symbolic communication if they are to gain the full advantage of future communications capabilities.

In articulating vision, purpose, and intent, commanders must achieve both understanding and commitment in the leader team. Both are essential. As danger increases, those who assume the greatest risks must fully comprehend the task at hand and commit to its accomplishment. Training that promotes this kind of understanding and commitment will be very important to developing strong vertical leader teams in future forces.

Dispersion of units across an extended battlespace or urban battlefield will amplify the difficulties while increasing the reliance on vertical team performance. While technological advances will help maintain contact between dispersed forces, that better communication capability will not automatically lead to better understanding. Reliance on mutual understanding of tactical concepts, doctrinal terms, and the commander's intent to ensure cooperation will increase just as Objective Force operations call for more complex, higher tempo operations.

Essential characteristics of future force leaders will persist. The leaders and SMEs interviewed during the project expressed definite ideas about the traits needed by leaders of units undergoing transformation. It is reasonable to project that the traits they identified will be appropriate for the future force (Table 4). The only distinctive trait that emerged was the requirement for digital literacy and competence. Otherwise, the traits are fully consistent with the traditional wisdom regarding what makes a good leader. While multi-cultural characteristics driven by international coalitions are not new, they will certainly play a more prominent role in the Objective Force.

Table 4

Candidate Knowledge, Skills, Aptitudes, and Attitudes for Future Force Leaders

Attribute	Description
Knowledge	
Tactical Literacy	Understanding of basic language and principles of military operations
Digital Literacy	Understanding of digital technologies and their operating principles
C4I Systems Savvy	Understanding of C4I and network capabilities and limitations
Multi-Cultural Awareness	Understanding of different value systems and communication barriers
Skills	
Tactical Competence	Mastery of the basic principles of military operations
Digital Competence	Ability to leverage the capabilities and architecture of C4I systems
Multifunctionality	Competence in multiple functional areas and/or domains
Communication Skills	Ability to express ideas clearly and convincingly by speaking and writing
Cognitive Integration	Ability to process and integrate diverse, multi-source information
Interpersonal Skills	Ability to collaborate with others by direct and mediated means
Teambuilding Skills	Ability to establish and maintain effective collaborative teams
Mentoring Skills	Ability to teach, coach, and mentor subordinates and peers
Multi-Cultural Teamwork	Ability to work with team members from diverse cultures
Aptitudes	
Self-Awareness	Understanding of own strengths and limitations; monitoring of own behavior
Multi-Sensory Facility	Capability to process visual, spoken, tactile, and composite data streams
Cognitive Flexibility	Capability to conceptualize problems and solutions adaptively
Time-Space Concepts	Capability to relate time and space dimensions in a dynamic tactical context
Temporal Flexibility	Capability to adjust or rescale operational timeframe rapidly
General Adaptability	Flexibility of intellect and temperament to adapt quickly to change
Interpersonal Adaptability	Flexibility to adapt to changes in superiors, peers, and subordinates
Mental Reflection	Capability to learn from own and others' successes and mistakes
Attitudes	
Forcefulness	Routine display of decisiveness, initiative, and energy
Confidence	Projection of confidence and positive spirit, even in crisis
Commitment	Obvious evidence of dedication, persistence, and determination
Open-Mindedness	Willingness to accept change in any aspect of the operational environment
Role Flexibility	Acceptance of variable duties and novel organizational structures
Risk Tolerance	Willingness to make mistakes and accept others' mistakes
Multi-Cultural Respect	Constructive regard for foreign values, beliefs, religions, etc.

The set of leader traits summarized in Table 4 is not all-inclusive. The list omits many factors generally assumed important for leaders, such as general intelligence, diligence, honesty, integrity, loyalty, and resourcefulness.

The factors listed in Table 4 were derived without regard to their relative importance. Establishing their comparative weight would require development of new assessment techniques and procedures. Therefore additional steps are required to establish valid criteria for selecting and qualifying future force leaders. The path leading from candidate factors to sanctioned selection/qualification procedures will involve systematic research and validation, geared to the evolving doctrine, organization, and materiel of the Objective Force.

The scope and methods of this project did not disclose how leader traits might relate to performance of vertical leader teams. Future research will be required to investigate the interplay between leader traits, tactical factors, and performance dimensions.

Leader responsibilities will differ from past models. Typically, new concepts require leaders to perform tasks different from those of the older model. Leaders of the IBCT have had to learn to employ wholly new systems and capabilities (Mobile Gun System [MGS] and Anti-Tank Guided Missiles [ATGM] companies, Unmanned Aerial Vehicles (UAV), civil affairs soldiers). They are also expected to understand small-scale contingencies as well as conventional operations. Increased requirements for knowledge of tactics and techniques, weapons and system effects, communications capabilities, and other details add to the basic leader tasks of all members of the chain of command. Additionally, customary relationships may change between troop leaders and staff leaders.

Defining leadership roles with precision for future forces is impossible at this stage. Extrapolating from the Experimental Force (EXFOR) and even from the IBCT will not yield clear insights to Objective Force issues of leader roles since the Objective Force will differ so markedly from current units.

It is reasonable to suppose, however, that the automation, robotics, and improved situational understanding of the Objective Force will permit greater spans of control (more subordinates grouped under single commanders and thus, perhaps, fewer levels of organization). Advanced command and control tools in the future force will also support faster decision-making and therefore potentially more decisions in a period of time. It is also logical to expect that leader roles and unit staffing will change as information becomes more accessible to all and the need for staff information handlers/collectors diminishes. Future staffs may serve multiple vertical levels of organization in a dynamic environment.

Qualitative changes may also occur. It may become desirable to raise the experience levels and seniority of small unit leaders as the effectiveness, dispersion, and responsibilities of small forces grows. That is, where lieutenants and captains lead today's platoons and companies, captains and majors may provide the parallel leaders in tomorrow's minor units of action. It may also be useful to include in vertical leader teams mentors, technical specialists, and advisors who have no tactical responsibilities and who are only "virtually" present with the fighting unit. Issues of teamwork, mutual trust, and unequal sharing of risks and rewards all accompany such developments and will challenge trainers and commanders.

The need for back-up training will confront the future force leaders. Vertical teams will need to be able to continue functioning when high technology capabilities become degraded or unavailable. Digital system and network failures are to be expected on future battlefields. Further, joint and combined operations may well entail mixed forces where some elements are not equipped with digital tools. The need for back-up skills (utilizing non-digital procedures or alternative digital capabilities) has been identified in previous work (e.g., Campbell, Ford, Shaler, & Cobb, 1998; Salter & Black, 1998). Back-up training to maintain analog skills was very much evident in the IBCT as the unit prepared for their Warfighter exercise. The emphasis on analog skills was driven mostly by chronic technical problems with digital systems. Because of competing priorities and finite training resources, future units can expect difficulties in maintaining non-digital proficiency.

Developing multifunctional leaders poses notable challenges for leader training. Future force leaders will be expected to understand disciplines and operations common to larger formations than battalions and brigades. Leading in a larger range of missions, cooperating with joint forces and civilian agencies, and operating directly under joint or combined headquarters are all possibilities that will stretch the capabilities of future leaders. What level of knowledge and proficiency do leaders require in "secondary" functional areas? How much additional time must be added to an Officer Advanced Course, for example, to expand functional competencies? How should unit training programs change to accommodate the performance requirements and environment of multifunctional leaders? How does the career path for a multifunctional leader differ from a traditional career path? How does the multifunctional leadership model impact the mentoring process? Might a leader in the future force require a network of mentors? At the very least, these questions point to an increased burden on institutional and unit training programs.

Providing standards for vertical leader teams in the IBCT or Objective Force environment will raise new training issues. The Army has developed standards for staff actions and for the estimates and orders process, but it has yet to publish complete tasks, conditions, and standards for today's vertical leader teams. Army studies on Objective Force leadership requirements are addressing the missions and roles of future leader teams but are far from specifying precise standards for them.

The IBCT vignette-based training technique observed in this study deliberately avoided applying standards to vertical leader teams. Its stress on innovation and mutual understanding made those issues paramount and, while the training material offered trainers broad guides to possible solutions, the program avoided standards-based assessments.

As Army transformation matures, collective leader training standards will become necessary. The changeable nature of future organizations, the requirements for future organizations to function under different types of headquarters (brigades subordinated directly to corps, joint task forces, or foreign/multi-national formations and so on) and the variety of missions pose special problems. Solving them calls for clear yet flexible standards for leader teams.

For instance, an IBCT arriving early in a new theater of operations could find itself assigned to a U.S. Marine Corps Expeditionary Force or a combined (multi-national) joint task force before being transferred to an Army corps or division. In those circumstances its leaders and vertical leader teams must be prepared to function within an organization with standards different from the Army's. They will also have to be capable of accepting additions to their own organization—new units and new leaders—who have not trained with them and do not understand their methods or expectations. If the IBCT (or Objective Force) vertical leader team loses coherence or efficiency in those cases, it will simultaneously lose combat power. Army standards for collective vertical leader team training should therefore provide for realistic performance levels under a range of conditions from "pure" unit composition to mixed leader team content.

If, for example, standards call for the unmodified IBCT vertical leader team to distribute information internally with a 90 percent accuracy rate within an hour, then deliberate thought should be given to what standard is realistic and acceptable when the brigade becomes the nucleus of a mixed nationalities formation under joint direction. Similarly, if an Objective Force leader team is

trained to recognize significant (e.g., mission-changing) conditions and alter its concept of operations within twenty minutes during an attack, then conditions that invalidate that standard should be identified and accounted for in doctrine.

Part of this definition of standards should focus on establishing leader team performance thresholds that mark unacceptable losses of capability. Defining this kind of limit would assist future commanders not only in training their leader teams but also in understanding the risks of disrupting established command relationships.

Maintaining up-to-date standing operating procedures (SOPs) will tax transformational units. The transformation process involves frequent changes in equipment, doctrine, and training technology. In addition, reorganization will bring wrenching realignments of personnel and functions. The dynamic nature of the transformation environment will create a need to update unit SOPs frequently, perhaps several times a year. Capturing new tactical and procedural knowledge as it emerges demands substantial effort and vigilance, as does incorporating the new knowledge into procedural documents. The spectrum of full-dimensional operations, including joint and coalition operations, will further increase the cost and effort required to maintain unit SOPs. The 4th Infantry Division's (Mechanized) (4ID) experience as it transitioned to Force XXI operations highlighted the difficulty of keeping SOPs up to date (Dudley et al., 2001). This concern also offers opportunities for vertical leader team development. By making SOP adjustment and correction part of leader development through post-exercise critiques or other means, leaders of vertical teams can promote greater mutual understanding among teammates and may uncover problems and solutions missed in other activities.

Leader training must be guarded in spite of competing requirements. As a matter of training priorities, leaders at every echelon acknowledged the importance of training subordinate leaders. In practice, however, the daily routine of operational requirements takes precedence over leader training. (Indeed, the practice of labeling leader training as "professional development" contributes to the tendency to relegate it to a lower priority.) With a single exception, the time set aside for leader development in the units observed was minimal and subject to cancellation or postponement in the event of any conflicting requirement. The experience of the research team and remarks made during interviews confirmed that leader training ranked low in the priority of unit activities. In the words of a Sergeant Major whose sentiments were echoed by many, "Leadership development programs are personality driven. Most commanders don't do them at all. Those who do them fall into two camps. There are those that just go through the motions and there are those who are really interested in teaching their subordinates. The teachers are rare. *We expect subordinates to work hard to learn their profession. We should expect the leaders to work equally hard to teach their profession.* [Italics added] The leader owes it to his subordinates ... to be technically and tactically competent and he owes them the opportunity to grow professionally... [And yet] it's the first thing cut from the training schedule every time."

This situation must be remedied if the Army is to transition successfully to truly different organizations, tactics, and techniques in the future. Changing it may call for a more structured approach to leader training or for making leader training accountable and fully assessed. Mainly, though, it seems to demand the focused attention of senior leaders.

Leadership practices need to be amended as experience accumulates. The first units of a new design typically operate under draft or provisional rules. Their experience forms the basis for changes to early assumptions and the roles of leaders and leader teams change as training or tactical experience grows. As the Army forms its future forces under new TO&Es and with new doctrine and equipment, leaders of those units should expect to change their techniques and methods as soldiers and the leader team learn more about how the new organization actually functions. The first digitized division, for example, has had to take an incremental approach to installing the leader practices related to its new combat service support (CSS) organization. Assuming the presence of a number of reporting and force tracking enablers, the division's CSS system re-assigns direct support maintenance personnel and re-subordinates forward support company commanders and battalion commanders. Without a fully capable ABCS architecture, however, reporting and directing support operations had to be done differently than the design specified.

Likewise, the IBCT is modifying its leadership techniques as it fields elements of the ABCS and as its sub-units convert from old TO&Es to new ones. Further changes are likely to occur when the brigade receives its new combat vehicles. Units of the Objective Force will likely undergo an even more radical departure from their past experience. Studied approaches to leader methods and techniques and to leader team building akin to the vignette-based leader training of the IBCT will be useful at that time. Similarly, frequent internal and external assessments of leader training practices will probably be useful. In any case, leader practices, methods, and techniques will have to be studied deliberately and will have to keep pace with significant changes in unit capabilities, especially those pertaining to C4I capabilities.

Sustaining effectiveness and cohesion of vertical leader teams in the midst of change is a challenge. The Objective Force concept stresses tactical agility and continuous operations as force multipliers. Implementing this may mean that stable organization for combat becomes the exception rather than the rule. Leaders of an established force will therefore have to contend with frequent additions and deletions from their task organizations with potential consequences for sustaining combat power, mutual understanding, and cooperative action. Turbulence in organization for combat will also affect leader team cohesion and effectiveness as membership changes. The training challenge will be to reproduce these effects often enough to accustom leaders to dealing with them and to exercise doctrinal solutions to the problem. Technical means of familiarizing members of the leader team with the commander's and others' preferences, styles, and personalities (operations summaries, commanders' profiles, technical data) could also be useful in facilitating the addition of new members to a vertical leader team.

Teaming with less technically advanced elements can dilute a transformed unit's capabilities. Objective Force concepts plus experience with the IBCT and the EXFOR indicate that units incorporating advanced technology will frequently work with and for units that have not been converted to the new model. The IBCT experienced this during the Division Capstone Exercise II as subordinates of the 4ID. Leaders in the IBCT and 4ID encountered difficulties in understanding new capabilities and employing the brigade in consonance with its operational concept. The 4ID itself has dealt with similar misunderstandings more or less continuously as it assumed control of analog units or was subordinated to headquarters whose capabilities did not match its own.

Specific measures will be needed to integrate different capabilities and new subordinate leaders who do not fully understand the modernized un s technology. Otherwise the core leader team's effectiveness may suffer. Useful measures may include automated transfer of SOPs to the new unit, summaries of past operations and future plans, computer monitoring of messages and activities to flag departures from norms, and other technical aids to command.

Training must replicate teaming with unfamiliar civilian entities. Army operations have increasingly involved cooperation with civilian agencies and authorities. Army training incorporates "civilians on the battlefield" in some instances and occasionally requires unit leaders and staffs to cooperate with civilian authorities. The Objective Force concept and recent field experience suggest that future forces will only gain their full potential by coordinating their actions with those of civilians in fully integrated actions. Since the goals and preferences of civil organizations and authorities do not match those of military forces and because their modes of communications differ from military means, training for this integration is important to Objective Force leader preparation. Because of the wide disparity of civilian concerns, the Army would be wise to replicate realistic civilian effects in its leader training. Specifically, trainers should consider employing variations of the CTC's "uncooperative enemy" philosophy as they train for integrating civilian and military capabilities. That is, they should confront Objective Force leaders with diverse and divergent interests among the civilian groups with which they train.

Future leader teams will have to maintain effectiveness over very large areas. Team dynamics today depend on frequent face-to-face meetings and the knowledge that time-space dimensions allow members of the leader team to meet in person from time to time. Objective Force conditions will extend unit dispersion and may also reduce the number of leaders present in a force. Future commanders will choose their positions carefully to assure that their presence influences operations optimally; in doing so they will knowingly remove themselves from other parts of the battlefield. Issues of mutual understanding, private consultation, encouragement, and other personal interactions will have to be handled differently. "Huddles" of the entire command team and the unit staff will be impractical. With a faster decision cycle in operation, individuals who lose communications will be more isolated than is now the case. Obviously, future communications will determine exactly how leaders deal with this condition, but training in general and leader training in particular will have to replicate these conditions. Today's training areas are too small for realistic practice of EXFOR tactics above battalion level. Tomorrow's training facilities will have to be even larger if they are to prepare future leader teams to remain effective under conditions of extreme dispersion.

Training must prepare leader teams to maintain their effectiveness over greater time spans. The extension of operations in time is related to their extension in space. Today's units adapt to extended operations by resting leaders regularly and maintaining a fresh shift on duty. In reality, this rarely amounts to more than three or four days of continuous operation. If Objective Force technology permits the truly continuous application of force, leader team effectiveness will have to be reconsidered. Adding extended time to the large spaces of Objective Force operations means that leaders and units will move frequently and that the opportunities to rest and to meet will be limited. Leaders trained to employ periodic conferences and personal meetings to assure continuity and coordination of operations will have to adapt to

changed circumstances. Their planning and conceptualization will also have to extend beyond familiar time periods or phases to address actions over weeks instead of days. Training exercises will have to reflect that and doing so will have implications for every aspect of exercise planning from design to control to assessment.

Fighting and deploying will occur simultaneously. Objective Force units will be designed to initiate operations early in the deployment cycle. Leading units may begin fighting while succeeding elements are still arriving. For leaders and vertical leader teams, this implies operating with a changing force structure and a growing leader team. Leaders will need the ability to fight parts of their commands while other elements of the leader team look to the arrival and forward movement of incoming units. Dividing leaders' attention in this way will alter basic assumptions about concentration of thought and effort and will change the doctrinal applications of synchronization and economy of force. Training for such operations demands more complex approaches and raises new issues like replicating conditions of deployment and enroute planning and coordination. Future leader training will have to confront the leader team with these concerns and create conditions associated with simultaneous deployment and combat.

Including RC members in vertical leader team training is a challenge. Because of limits on their training time, RC leaders face special training challenges in mastering and maintaining currency on new equipment, weapons, and concepts. Their integration into vertical leader teams that mix AC and RC leaders must overcome the same difficulty. Experience in the 4ID indicates that differences in AC and RC schedules and availability can pose substantial training challenges. Training day limitations simply do not allow the same RC leaders to be present for all exercises and training events of AC units. Weekend training that is routine for RC leaders can become onerous for AC leaders who already labor under a heavy workload.

Objective Force organization will depend on RC participation. Means of condensing the initial training for RC leaders in key concepts and equipment, provisions for sustaining their skills with C4I equipment, and techniques for assuring that AC and RC leaders can cooperate well enough to guarantee full exploitation of Objective Force capabilities are all issues. Either staff leaders and commanders of the components must work together often enough to form strong teams or Objective Force organizations must arrange for the RC to staff parts of the force that require less complete integration with other parts of the force. Possible training remedies include distance learning programs; distributed leader team exercises; assignment of full time technicians to RC positions requiring constant system training; and block training of units that do not have to be as closely integrated with other arms. Embedded training in staff leader (C4I) tools might be used to keep RC leaders competent in particular tactics, techniques, and procedures (TTP) and informed of system changes. Autonomously updating embedded training modules with materials developed in the AC and with information that clarifies the preferences, style, and patterns of action of the RC unit's AC command team partners might also help improve AC-RC cooperation.

The future force must leverage "skip echelon" command and control where higher level commanders participate in the unit's C4I structure. Objective Force C4I will permit higher level commanders to intervene in tactical actions anywhere on the battlefield. They will understand the risks of this intervention, but will be able to track events in detail and therefore be capable of

following critical actions very closely. When senior leaders choose to direct specific actions several levels below their own, junior commanders whose operations are directly affected and intermediate commanders whose direction has been interrupted will have to respond effectively. These responses will range from contesting the direction based on factors not revealed through tactical communications to re-shaping the surrounding actions to conform to the change. Senior leaders will need to be instructed and trained in the risks and advantages of such actions and in the parameters affecting them. Teamwork in general will be affected and staffs at all levels will have to practice the adjustments to the force as a whole that accompany such changes.

Participating in joint operations requires training emphasis. Concepts for the future foretell relatively small Army units acting as service elements of joint formations. This entails direct interaction with a joint (multi-service) staff and participation in operational level planning and execution, actions generally unfamiliar to leaders of formations below corps level. Leaders of Objective Force units will need training in joint doctrine, terminology, organization, and practices to participate effectively as service component leaders and staff. Leader education and training will have to address these subjects.

Training Techniques for Future Force Vertical Teams

Training for future leaders and leader teams should be based on anticipated combat organization and on a doctrinally accurate vision of leader requirements in the Objective Force. Promoting stability in leader teams through deliberate personnel policies will facilitate building strong teams and offset the disruptions of additions to the task organization and frequent changes in supporting unit assignments. Sustainment training against valid standards is also essential, although this will necessitate establishment of Army-sanctioned collective standards and competencies for vertical leader teams.

The Army's practice of assuring understanding "two levels up and down" seems a useful guide for training and sustaining the abilities of vertical teams. That is, brigade leader training should extend to company level, battalion training to platoon level, and so on. This helps assure understanding of the commander's expectations and promotes mutual understanding between leaders who must cooperate closely during operations.

Variable training audiences. Today's unit-based training exercises involve more or less stable organizations. Changes to task organization occur within the limited context of brigades, divisions, and corps. Leader team adjustments (orientation, issuing of orders, changes of mission, etc.) are similarly limited. To conform to Objective Force concepts, future training will have to include much more extensive organizational changes. Training vertical leader teams to accept, employ and release supporting cells or units from a wider range of sources—reachback to national capabilities, use of theater assets, direction of adjacent units, direct control of other service units—will be complex. Staffs and command groups may evolve into fluid collaborative cells in which composition and functions change as a mission progresses. Supporting that kind of training means arranging for the periodic participation of a large number of real units or highly capable role players during an exercise. Providing the training commander with a realistic set of optional supporting cells will also add complexity to training. Finally, providing

observer/controllers or evaluators capable of assessing the quality of the vertical leader teams' use of such resources and of judging its tactical actions will be challenging.

Training for continuous operations with overlapping phases. Objective Force operations and those of the IBCT contemplate fighting while deploying and conducting SASO during combat operations. They also anticipate longer periods of continuous action without pauses. Future leaders will therefore employ expandable vertical leader teams that change as operations progress. Techniques that facilitate training for these operations include lengthy command post exercises supported with simulations complex enough to represent activities from home station through ports and operations of all types. Alternatively, non-continuous training events that compress time by moving between major decision points may be used to train and assess teams. Such exercises have been done manually and with rudimentary simulation support in the past (in theater war games, at Battle Command Training Program [BCTP] seminars, in the School for Advanced Military Studies, etc.).

Leaders of future forces will require very capable simulations to support their training. As a minimum such simulations will have to present detailed data on supporting headquarters and units, operations of other component forces, organization, and capabilities of attached U.S. and foreign units. Additionally leader teams in such operations will need information on status of all deploying forces, the transportation system, port operations, theater supply, national and theater intelligence, host nation capabilities, and detailed information on the enemy and the population. Providing these capabilities at a reasonable cost in exercise overhead will test the training support community.

Coalition operations and joint operations involving specific tasks and limits. Foreign and other service elements normally cooperate with U.S. forces under clear limitations concerning their missions, employment, and uses. Forces as small as brigades are not now required to accommodate these limitations in their operations. Future Army forces of brigade size will have to do so and their vertical leader teams will need to be trained to function in those circumstances. Arranging the participation of foreign and other service units during brigade- and division-level training of the future is a good means of acquainting leaders with these dynamics as they affect actions between echelons. Some of this information can be conveyed in formal leader training at schools and in units. Basics can be taught in computer-based instruction programs designed to prepare leaders for assignments to Objective Force units. Command-sponsored exchanges or U.S. leader travel to observe foreign and other service exercises is a potentially valuable means of familiarizing leaders with employing joint and coalition forces. Finally, command post exercises and full-scale field training at CTCs seem necessary to promote this understanding in leader teams whose cooperation will be affected. In such training, leaders should be made to face significant and realistic limitations on the employment of other services' and other nations' units.

Including foreign military and civilian personnel as members of vertical leader teams. Working directly with foreign staff members, commanders and civilian officials as team members will be necessary to leader team development. Since Objective Force units will frequently serve in coalitions, their leaders need training in cooperating, responding to, and directing the activities of foreign leaders and officials. The fact that command authority is

usually limited in these dealings complicates the matter. Among the techniques for training leader teams to work effectively with foreigners are area and cultural orientations; instruction in human relations; visits to the units, staffs and agencies of other nations; temporary duty on alliance or coalition staffs; and multi-national training events. In particular, leaders of units reliant on advanced technologies need to be trained in differing classification systems and means of including foreign leaders in operations without compromising U.S.-only information.

Employment of advanced technologies in C4I. It is impossible to foresee the detailed development of C4I technologies, but it is reasonable to assume that future command facilities will make very sophisticated capabilities available to future vertical leader teams. Fielding small, mobile command centers that use AI tools to replace some (or most) members the traditional staff exemplifies the kinds of changes that are possible. Indeed, command centers may become outmoded. To date, IBCT efforts to master digitized command tools only hint at the difficulty of shifts of that nature. Training leaders—especially experienced leaders grounded in other systems—for that sort of breakthrough technology will require deliberate study of change in the service schools and should be reinforced by identification of individual leaders' abilities to accept fundamental changes. Preparing leaders and leader teams for major technical change should involve deliberate, structured efforts by special training teams or in special purpose schools. The introduction of tactical nuclear weapons to the Army in the 1950's offers an unclassified example of how the service has prepared leaders for radical change in the past. In that case, the Army established a special course to teach leaders the fundamentals of employing these wholly new weapons. Basic changes in C4I technology may be introduced in a parallel fashion.

Multifunctional performance requirements for many or all team members. Leader team members may take on new responsibilities temporarily—as part of deployment or detachment— or permanently. New force designs may change the nature of tactical units and/or of staff organization. The addition of air platforms to ground maneuver units, for instance, necessitates new supervisory tasks for commanders and staff leaders. Similarly, new C4I technologies or mission assignments may expand the responsibilities of staff leaders or involve commanders in new activities without adding new specialists to the unit. In any case, future leaders may be required to supervise more than a single, familiar functional area. Preparing leaders for such tasks can be done methodically in schools and in leader team training. Where new technologies are concerned, embedded tutorials may be useful. Where staff leaders must take on additional duties because of new capabilities in the unit or loss of other leaders, reachback access to specialty and procedural guides may be of value.

New techniques for team interaction (e.g., digital staff huddles). The C4I means of the near future will permit the kind of distributed interaction that the concepts for the IBCT and the Objective Force anticipate. Leader collaboration via telecommunications before, during, and after operations (distributed collaborative planning, electronic huddles, multi-echelon wargaming) will be necessary to support the high tempo of operations and the wide dispersion of forces contemplated in both concepts.

Training leader teams to use these means and learn these processes will require training design that forces or rewards this kind of distributed interaction. Trainers should therefore

assure that command posts or commander platforms operate at realistic distances from each other, that they move as frequently as the situation demands, and that the pace of events makes extended planning sessions, staff huddles, and command conferences impractical and counterproductive. Observer/controllers and evaluators should be provided with Mission Training Plans (MTPs) that contain clear conditions and standards for team interaction. Training assessments and AARs should present data on the effectiveness of team interaction, critiques of the methods used and recommendations for improvement.

Artificially intelligent C4ISR capabilities, including information tools and decision aids. Leader teams in the IBCT are learning to use the advanced capabilities of the ABCS C4I suite. Objective Force vertical leader teams will go farther, eventually integrating artificial intelligence into their operations. When that occurs machines will begin supplanting staff experts and changing some of the team interactions between levels of command.

Extrapolating from ABCS-based leader training to training with artificial intelligence tools is a far reach. The novelty of each system, however, calls on leaders to have extraordinary confidence in their C4I systems. Trainers seeking to facilitate adoption of these new aids will have to design programs that first teach leader teams the capabilities of the equipment, then demonstrate those capabilities as they affect team interaction. In the case of AI, trainers will have to convince leaders and leader teams that the software/hardware combinations provide better support than the man-in-the-loop systems. This will mean carefully documenting the differences in speed, quality of information, accuracy in reporting and efficiency in coordinating tasks and comparing those to human performance.

Introducing AI-based C4I will involve experimentation and adjustment of original assumptions. This has been the case with ABCS training. In order to assure leader confidence and support, it will be important for senior leaders and trainers to initiate leader training in AI with a clear understanding that the first solutions are tentative and that leader team input will be essential to finalizing system design and operation.

It is possible that the Army might learn useful lessons and approaches by studying Air Force experience in training leaders to use "fly by wire" equipment, missile defense routines, and space operations computers.

Robotic systems that require operators/controllers and alter command and staff dynamics. Capable combat robots now exist and training with robotic systems will soon occur in the IBCT. The Objective Force will field a great number of robotic systems from the outset and will use IBCT experience as one basis for training leaders to integrate soldiers and robots. For leaders and leader teams, employing robotic systems involves knowing machine capabilities and understanding their control mechanisms. Basically, leaders will have to know how to fit robots into combined arms teams and how to explain and justify the use of robots to soldiers and outsiders (e.g., allies, less sophisticated U.S. units, civilian agencies).

Leader teams will have numerous robotic subjects to address. These include technical reliability, effects on cooperation between echelons, sharing or transferring control from one level or unit to another, countermeasures, legal limitations, and protection of civilians. Other

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implications concern the pacing of operations, cross-functional capabilities of some robots (e.g., direct fire versus intelligence collection) and balancing endurance of human combatants with that of machines.

Unpredictable interruptions in digital capabilities or signal support. All command and control systems are subject to interruption or partial failure. Historically, the introduction of new means of C4I has required users to retain some capability for "degraded operations." In the case of digital capabilities, leader teams must understand vulnerabilities, expedient corrections, and degrees of incapacitation so that they can make sound decisions about continuing or changing their modes of operation. Doctrine should provide general guidance to commanders regarding acceptable levels of system degradation. Training should replicate likely interruptions and—unlike current simulation-based training—assure that losses of capability have realistic effects on team cooperation and coordination between vertical levels of organization.

Current problems in training fidelity include the inability to represent the effects on command and control when command posts and signal nodes are destroyed in simulation. Future training tools should provide for loss of range, bandwidth, contact with distant stations, impairments caused by enemy actions, interference created by improper systems engineering and similar problems. Only by training in such an environment can vertical leader teams be forced to deal with C4I problems realistically. Training systems and the control apparatus should be designed to note their choices and actions and to provide feedback in terms of alternatives as well as actual and potential system performance.

Vignette-Based Training for Vertical Leader Teams

Vignette-based leader team training conducted by a well-prepared, skillful leader-facilitator was a powerful training tool in the hands of the IBCT. It provided the commander with clear leader training objectives and easily applied, self-contained exercises that spanned several echelons. It facilitated training vertical team integration and exercising initiative within the scope of the commander's intent. At the same time, validation of this new training technique awaits further investigation. .

The Leader Development Vignettes

The IBCT Leader Sustainment Training Program vignettes deliberately stimulated original solutions to novel situations and assisted IBCT leaders in developing leader skills in vertical teams. By design, the vignettes presented problems in four categories: interpersonal, conceptual, technical, and tactical. The geographic settings and tactical missions of the vignettes varied to encourage fresh approaches to problem solving.

The vignettes provided no "right" answers and were written to allow for different solutions. Each vignette consisted of four to ten pages of printed material intended to minimize preparation time on the part of the commanders conducting the training (see examples in Appendix E). The TRADOC proponents for infantry, field artillery, reconnaissance, logistics, Military Intelligence, and Battle Command commented on the draft vignettes prior to their use by the IBCT.

Under the initial concept, IBCT leaders were to conduct vignette training once per quarter in five-day blocks that would proceed from brigade to platoon level. Each echelon of command was to conduct one day's vignette-based training in turn, beginning at the brigade level. Leaders from three echelons would participate in each training block in order to involve all leaders "two levels down." To promote continuity within the IBCT, the training audience would overlap from day to day as echelons changed. The overall goal was to instill superior understanding of unit capabilities, techniques, procedures, and policies and to create mutual understanding and cooperation within vertical leader teams.

The brigade commander was to lead brigade level training on Day One of the cycle and personally train his battalion commanders, company commanders, and brigade staff leaders. On Day Two battalion commanders would direct training with their own staffs, company commanders, and platoon leaders as the training audience. On Days Three and Four the level of training would move to company and platoon levels, using the same formula for leader participation. The fifth day of the cycle was left open for commanders to use in discretionary fashion (U.S. Army Command and General Staff College, 2000).

In practice, the IBCT leaders modified the vignette training design. To meet their most pressing training needs, they chose to use "tactical" vignettes almost exclusively. They also chose not to train for five consecutive days and instead conducted vignette-based leader training sessions in one- and two-day blocks. Finally, they cancelled a number of scheduled leader training events, reducing the number of vignette-based training sessions considerably from the design target.

These changes reduced the number of opportunities for researchers to witness vignette-based leader training and changed the character of the training. The departure from initial design of the training did not, however, prevent the use of vignettes or impair the quality of the sessions that the IBCT units conducted.

Findings from Vignette Training

The results of this project led to the identification of numerous advantages of the vignette training technique (Table 5). Researchers concluded that vignette-based training can enhance vertical team integration and individual leader skills while also developing essential team competencies among primary and supporting staff. The technique can train leaders in using digital capabilities and in employing the Military Decision-Making Process (MDMP) tools residing in ABCS. Doing so can simultaneously enhance the development of individual digital skills and system operator horizontal integration.

Table 5

Advantages of Vignette-Based Training

Feature	Advantage
Training Structure	Structures the learning environment to enhance training value
Adaptive Focus	Promotes adaptive behavior, critical reasoning, and creative solutions
Accessibility	Affords on-demand access to structured training (no external assets required)
Low Overhead	Minimizes resources required to prepare and execute training exercises
Doctrinal Base	Ensures consistency with doctrinal view of future leadership requirements
Communication Forum	Establishes environment where reflective sharing of ideas can be emphasized
Echelon Spectrum	Develops leaders at platoon through brigade levels, using common method
Library of Options	Provides broad selection of exercises to meet specific unit training needs
Mentoring Forum	Creates opportunities for leaders to teach, coach, and mentor subordinates
Multi-dimensionality	Trains tactical, technical, interpersonal, and conceptual skills
Acculturation Forum	Promotes sharing of unit values, beliefs, expectations, and norms
Flexibility	Can be readily tailored to achieve specific unit teambuilding objectives
Modularity	Accommodates updating and expansion of exercise library

As a measure of their acceptance, departing IBCT leaders have said that they intend to access the vignettes from the CAL website so they can use them in future assignments. The authors recommend that vignette-based training methodology be used in Officer Education System (OES) and Non-Commissioned Officer Education System (NCOES) programs of instruction. The use of vignette-based training should also be encouraged for leader development programs to achieve better vertical leader team integration in units.

The preparation and skill of the leader-facilitator greatly affect the quality of the training and learning achieved. Observations of leader-team vignette-based training conducted in the IBCT revealed that some leader-facilitators had prepared thoroughly for the training while others had not. The quality of the training and the benefits derived from the conduct of training were observed to be in direct proportion to the leader's preparation, involvement, and training skills. Further, the extent to which the commander or leader-facilitator utilized the coordinating staff to prepare for, support, and participate in the training process appeared to affect the teambuilding achieved significantly.

Excellence in the execution of vignette-based training is illustrated in the following example. The battalion commander provided a brief explanation of what vignette-based training is, what it is designed to accomplish and what he hoped to achieve as a result of the training (training objectives). He concluded, "... and have fun with this thing. I expect to see some imaginative solutions." He then introduced the vignette in general terms and provided the higher command's mission statement for the battalion. He gave a carefully crafted statement of the brigade commander's intent that he had prepared for the training. The battalion S2 described the background leading to the current situation—the road to war—much of which was also fabricated in cooperation with the battalion commander and S3. The S2 briefed the current enemy situation, expanding on the information provided in the vignette materials. The S3 briefed the friendly situation, also with embellishments, and presented a battalion mission statement that omitted any direction about how the mission could or should be accomplished. The battalion commander articulated the requirement that each company group was to develop a

battalion scheme of maneuver with the company commander acting as battalion commander and with each of the platoon leaders acting as the company commander responsible for the main effort. He advised them that the battalion staff would serve as their staff, but only to provide technical advice and answer questions, and that he would move from group to group to answer questions as well. The Command Sergeant Major and all of the battalion primary and special staff were present. Doctrinal references were available and each group was provided the necessary supplies for preparing graphics and briefing aids.

During the preparation for the briefings, discussions were lively with much professional dialog in both tactical and technical areas. References were in high demand and some groups dispatched runners to get more. As each group briefed their solution, the battalion commander frequently asked "what if" questions to stimulate discussion of related factors. He also called upon platoon leaders to describe their plan for maneuver as the main effort, and called upon members of other groups and/or the staff to comment on the course of action being briefed. The event was concluded with a short AAR. During the AAR, the commander tasked each of the participants to provide him with a list of three tactical or technical areas addressed in the training in which they felt they were weak. In the following three weeks, they were to look up and read about each of the things they identified, informing him when they had accomplished that task.

Researchers observed both meaningful teambuilding and rich professional dialog without threat during this training. This training simultaneously contributed to individual professional development, vertical leader-team integration and horizontal teambuilding for the battalion staff. Thought, effort, and preparation by the battalion commander and the battalion staff were required, but the results indicated that their effort was an excellent investment.

Even in marginally effective vignette-based training sessions, some development of technical, tactical, interpersonal, and conceptual skills occurred as a result of subordinates' initiative and spontaneity. At the conclusion of one particularly disappointing event an observer remarked, "It wasn't exactly a waste of time, though that was certainly the attitude of [the leader]. This reminds me of when I was in school and a substitute teacher was sent in at the last minute. Unprepared, he/she simply read from the lesson plan and handed out a worksheet to keep us occupied for the prescribed period of time." Soldiers are always learning and a great deal of learning comes from observation. For motivated participants, the vignette in question yielded some benefits.

Communicating intent is critical to the demonstration of initiative. In training leaders and vertical leader teams to take the initiative, the commander's clear, unambiguous intent establishes the conditions necessary to train. The commander's intent needs to be carefully crafted, clearly stated, and carry in it the conviction to inspire confident exercise of initiative by leaders at lower echelons. Most importantly, the commander's intent must be understood. This study found that many commanders do not articulate their intent well enough to ensure understanding. As a result, subordinates' training in the use of initiative was inhibited. Further, the language used to articulate intent—the professional language taught in our institutions and shown as examples in doctrinal publications—is frequently not understood by young officers who lack experience and higher-level professional education. In several instances of vignette

leader team training, the failure to clearly articulate intent was the major factor that inhibited the behavior the training was designed to promote.

The project team concluded that each vignette should include a pertinent, carefully crafted sample statement of commander's intent for the leader-facilitator's use. This expression of intent must also use and teach proper application of doctrinal terms and concepts. Even greater problems of clarity may accompany early training of Objective Force leader teams because the number of new concepts, terms, techniques, and methods may be very large.

The grouping of the training audience affects the type of teambuilding accomplished. During the vignette-based leader training conducted in March 2001, the IBCT followed the vignette model that instructs the leader-facilitator to divide the audience of training participants into small groups of equal rank or position. During the training conducted in June, they elected to organize the training audience by maintaining the integrity of the existing chain of command. Other groupings of the training audience were also observed on other occasions. While the opportunities to observe training were limited, the results achieved in teambuilding—horizontal, vertical, or both—appear to be linked to the manner in which the groups were formed. In each variant of participant grouping a different set of advantages and disadvantages was observed. The advantages, disadvantages, and type of teambuilding to be achieved should be considered when planning to conduct vignette-based leader development training. The different training audience groupings that were observed are summarized in Table 6. In the cases of organizing by functional area and by task organization, only a single iteration was observed. The following paragraphs discuss each type of grouping in detail.

Table 6

Observed Training Audience Groupings

Ordered by ...	Primary Characteristics
Rank or Position	Groups of peers similar in grade, education, and experience (recommended)
Chain of Command	Hierarchical, multi-echelon groups reflecting diversity of membership
Task Organization	Mission-specific groups driven by organization for combat
Functional Area	Multi-echelon, same-specialty groups (e.g., intelligence officers, staff, and operators)

Order by rank or position (peer groups). This method, recommended by the designers of vignette training materials, supports vertical teambuilding. The groups consist of individuals of similar grade, education, and experience who are currently serving in similar positions. Two variants on this theme were observed. In one case, each group consisted of all company commanders of a single battalion. In another case, one company commander from each battalion came together with peers from the other battalions to form the groups.

The peer group method minimizes the tendency for one participant to dominate the discussion and avoids potential intimidation by the presence of more senior officers. While conducive to the learning of tactical and technical skills, ordering by peer group appears to support the development of interpersonal and conceptual skills more effectively than other

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methods of organizing training participants. It was observed that peer groups were less bound by convention, more creative in their thought processes, and more innovative in their creation of viable solutions. Organizing by peer group also creates greater opportunities for mentoring because of the relative inexperience of the group's members at lower echelons.

This method appears to be particularly well suited to learning the skills needed to quickly coalesce into teams. However, when the groups are formed from a cross-section of peers from different battalions, the teambuilding achieved offers little immediate value because the group members disperse back to their units of assignment when the training is concluded. Organizing by peer group encourages a non-threatening, non-competitive learning environment. The project team recommends this ordering method as being particularly well suited for brigade-level vignette-based leader development training.

Order by unit (chain of command). This method takes advantage of the existing organizational structure, and it strongly supports vertical teambuilding as well as simultaneous horizontal teambuilding and integration. It was demonstrated to be an excellent vehicle to promote vertical leader-team integration with lasting residual effects when training was conducted at battalion, company, and platoon levels.

This method appeared to be particularly effective for leader-team integration and the development of important team competencies at the platoon level. These team competencies include technical and tactical proficiency, confidence, and trust. At the platoon level the unique circumstance exists where the least experienced member, typically a second lieutenant fresh out of Officer's Basic Course (OBC), is in charge of the leader development training for the considerably more experienced NCO leaders of his platoon. In every case, the lieutenant benefited from the tactical and technical competencies displayed by his subordinates and his confidence in their skills was increased while the trust and confidence of the NCOs for "their" lieutenant was enhanced as well.

Ordering the audience by unit chain of command also appeared to be particularly effective when leaders who exhibited participatory and collaborative leadership styles conducted the training. A directive leadership style significantly inhibited participation, development of critical reasoning skills, display of adaptive behavior, and initiative. At the brigade level, ordering by unit fostered a competitive environment with clear winners and losers when the focus shifted from training subordinates to producing doctrinally correct maneuver schemes and attractive briefing aids. When battalion commanders briefed their team's solution, discussion was limited and the few questions asked were relatively trivial. It also invited comparisons of briefing style, TTPs, and quality of presentation that tended to either enhance or detract from subordinates' confidence in their leader. The project team's assessment is that this method of organizing discussion groups is an effective and recommended method for organizing participants at battalion level and below, but it is not well suited for use at brigade level.

Order by task organization. A single iteration of this grouping was observed. In this instance, the signal and engineer company commanders and their subordinate leaders were invited participants in a maneuver battalion's vignette-based training. These commanders participated as members of the battalion staff and served as technical and tactical advisers in the

staff estimate process during concurrent and complementary training using the same vignette, led by the battalion executive officer. Their subordinate platoon leaders were integrated into company-team groups. This method appears to support teambuilding and integration for both vertical and horizontal teams. It appears to be particularly useful to enhance tactical and technical skills and most appropriate for battalion level vignette-based training. Although ordering by task organization was not observed at the brigade level, the assessment is that the brigade training audience would be too large.

Order by functional area. A single iteration was observed—an *impromptu* adaptation of an existing vignette to train vertically aligned intelligence officers, staff, and digital system operators. This adaptation of vignette-based training appeared to support both horizontal and vertical coordinating staff teambuilding and integration while accomplishing the training objectives to improve functional area communication, information processing, and coordination procedures. This training event was similar to traditional vertically aligned logistics, communications, fire support, and intelligence exercises commonly conducted in brigade and division level organizations throughout the Army.

Training objectives determine vignette selection and influence the method selected for organizing the training audience. Commanders should determine training objectives considering not only the training needs of the organization and subordinate leaders, but also the training objectives for which a particular vignette was designed. Each vignette is designed to enhance one or more of the four leadership skills identified in FM 6-22 (22-100), *Army Leadership* (U.S. Department of the Army, 1999): tactical, technical, interpersonal and conceptual. The commander can simply select from the vignettes that are intended to enhance a particular leadership skill. Collectively the vignettes were designed to develop leaders who:

1. Understand intent and apply disciplined initiative to accomplish diverse missions.
2. Understand team-building concepts and can build cohesive teams.
3. Make appropriate decisions in complex and ambiguous operational environments.
4. Rapidly filter and prioritize information.
5. Display the tactical skills necessary for the full spectrum of military operations.
6. Leverage information technology to create situational awareness and dominance.
7. Develop organizations that continually improve their operations and systems.

The project team judged that vignette-based training was more successful in achieving the first five of the stated objectives than the latter two. Even so, the team's observers concluded that this training methodology accomplishes other important training objectives, as well. It can significantly broaden the experience base upon which developing leaders may draw. It enables initiative by providing important insights into how more senior commanders think, allowing deeper understanding and the ability to predict how commanders would be likely to respond to changing situations. It develops skill in thinking by illuminating the consequences of decisions, including impacts beyond the most obvious or immediate effects.

Commanders should select from the menu of vignettes and determine the manner by which to form subordinate discussion groups, based on the unit's needs-based training objectives and any supplemental or collateral training objectives. Since the number of vignettes to select

from is large (80) and anticipated to grow, a decision aid matrix could be developed to assist commanders with this process.

An unexpected change in the tactical situation or operational environment facilitates adaptive behavior and initiative within intent. Observers from the research team concluded that fostering initiative and adaptability during vignette-based training was the exception rather than the rule. A number of factors contributed to this circumstance. In some cases, a poorly stated commander's intent contributed to uncertainty and ambiguity. In others, the design of the vignette provided little opportunity. Vignettes designed to train tactical and technical skills were criticized by participants as being too simple. The time allotted for completion of the "deliverables" called for in the vignettes was regarded as too constrained to allow much consideration of the broader ramifications of decisions. A battalion commander questioned whether the vignette training process really gets at the notion of adaptive leaders taking initiative within the commander's intent. He saw no real opportunity for such initiative. Many echoed his thoughts.

A common thread was identified in the cases where participants did display initiative and adaptability. In each case, imaginative solutions were prompted when the leader-facilitator unexpectedly injected new information that created a change to the operational situation. This was accomplished by the leader asking "what if" type questions, or by providing additional information that dramatically changed conditions. For example, a battalion commander complicated the selected vignette scenario by interjecting that a soldier was missing. This caused the participants to decide how to accomplish the mission and deal with the new information. It presented a dilemma that potentially voided the course of action they had decided upon and to which they had to react quickly. Later, the facilitator introduced more new information: the missing soldier's identification card was found along with signs of a struggle—blood. The conditions were ratcheted up another notch, and another, each time followed by a rejoinder akin to, "What now, lieutenant?" After the briefer announced how he would deal with the new situation, the leader led an open forum discussion of ideas and options for dealing with the new situation. During the next briefing a totally different set of new information was interjected that required different solutions.

These observations led the project team to conclude that interjection of a situational change promotes the display of adaptive behavior and initiative. It also suggests that the design of vignettes can be improved. A list of potential changes to the situation could be added in the "instructions for the leader" portion of each vignette. The leader could draw from the list to promote adaptive behavior and initiative.

For training and teambuilding to be effective, a senior leader must serve as the active facilitator of the event. The leader's personality, attitudes, and thought processes, the manner in which problem solving is approached and communication is conducted with both subordinates and superiors, even body language—all are observable by subordinates. The traits demonstrated by leaders in their words, acts, and attitudes are important because they provide much of the context in which subordinates and teams operate. Teambuilding occurs within the context of the operational environment established by the commander, and it is important to understand that environment. Leadership and teambuilding demand the commander's presence. Subordinates

and teams require the feedback, reinforcement, and context that are provided by the involvement and interaction of the commander. A battalion commander offered that, "Vignette-based training depends on a confident, competent leader that can effectively mentor a group of junior leaders without feeling inadequate or challenged should they pose a solution that falls outside [the leader's] comfort zone." The effectiveness of vignette-based training, and the teambuilding that occurred as a result, were judged to be in direct proportion to the level of involvement by the leader-facilitator. In cases where the leader was present, actively involved, and willingly accessible to the training audience, good learning and teambuilding were achieved. In cases where leader-facilitators appeared to be disinterested, absented themselves from the training site during discussion periods, or were involved with their staff handling other matters, the value of the training and teambuilding was minimal.

A directive leadership style inhibits learning. A directive leadership style was found to inhibit participation, critical reasoning skills, adaptive behavior, and initiative. It was observed that directive leaders frequently dominated the discussion and imposed their own solutions as opposed to allowing for a free exchange of ideas. This is aptly demonstrated in the following example.

In this example of directive leadership style, the discussion groups were organized by unit. When the discussion period began, the commander immediately announced, "Okay, guys, here's how we're going to accomplish this mission." He then proceeded to outline his solution for the tactical scheme of maneuver. Subordinate members of the group, company commanders, were designated to accomplish a number of tasks in preparation for the briefings that were to follow. One was set to the task of drawing the scheme of maneuver on butcher paper. Another looked up the doctrinal reference for the maneuver to capture the key points and considerations for the commander and put them on a slide so that they could be addressed during the briefing. Other officers were told to prepare a fire support plan, determine how reach-back capabilities could be exploited, plan the locations and employment of signal nodes, etc. During an informal discussion following the training, one of the company commanders remarked that, "I would have done it differently, but the colonel was set on his course of action and I didn't want to contradict him." When pressed for his ideas, the captain said,

"The mission was to destroy the chemical plant, not fight the brigade. They were more than 20 kilometers away and in their barracks. If we had cut off communications and isolated the plant, they'd never have known what was happening until it was too late. We could jam their radios, cut the telephone lines, take out a few communications nodes and if we'd been monitoring their communications, we could even impersonate the local guys at the plant by sending messages saying that the situation is normal, everything is fine. And even if the brigade did react, that doesn't mean we have to fight them. Infiltrate some RSTA assets to keep an eye on things and if it looked like they were getting ready to leave the compound, a few cratering charges where the road goes through this defilade would stop them cold. That would force them to go another way and they'd be too late to influence the action."

The young captain's ideas had merit and demonstrated the kind of thinking that leads to initiative within intent. But he had no opportunity to express them.

Leaders who lack the qualities of adaptability and flexibility generally default to tactical solutions that focus on opposing forces and the application of combat power. During the conduct of several tactical vignette training sessions, the use of force appeared to be the only choice considered in resolving the issue at hand. Rather than explore a spectrum of potential solutions, many leaders defaulted to a recitation of doctrinally based maneuver techniques that focus on the destruction of opposing forces and ignored other, potentially better, solutions. For example, one vignette assigned the unit the mission of destroying a chemical plant in a cross-border operation into an adjacent neutral country. The focus of nearly every group was on attacking to destroy or divert a nearby brigade-size opposing force. This was one of several instances where the tendency to focus on application of combat power for the destruction of opposing forces was observed to take precedence over the mission and intent articulated in the vignette.

The operational environment of the future will likely involve a wide range of potential operations, enemies, and allies. "Friendly forces" will vary from true partners to sometimes competing paramilitary, irregular, indigenous forces with diverging political agendas that complement our own only part of the time. The presence of international, local governmental, non-governmental, or private relief agencies will be common, and every operation will be conducted in the glare of public scrutiny. If the only solutions considered to the dilemmas posed in tactical vignettes prescribe the application of combat power to defeat opposing forces, then trainers will forfeit much of the potential for learning and for broadening experience.

The tendency to default to the application of force is exhibited most by older leaders charged with conducting training and less by the young officers being trained. In the judgment of the project team, the trainers are not accustomed to an operating environment where non-combat solutions matter much. The project team concluded that over time the subject matter and intent of the vignette-based training methodology would cause mid-level leaders to become more adaptive and flexible. The team also concluded that the development of these qualities in the younger leaders will be less than what otherwise might be achieved because mid-level leaders are learning, too.

When the Army addresses the special challenges of the Objective Force, its leaders should consider preparatory training in new tactical dynamics and systems, and in group dynamics. The development of critical thinking skills in leaders should be an aim of future training programs. Leader trainers should also guard against the tendency of experienced soldiers to favor "safe" or familiar approaches in times of change. Instead they should stress that Objective Force team leaders will have to consciously promote free-ranging discussion as they teach new tactics and forms.

Command emphasis is imperative to ensure effective implementation. Leader training only receives equal emphasis with other training activities if the commander insists on it. Given their operational pace, most units find it difficult to manage the things mandated by higher headquarters. The addition of a weeklong leader training program will not be a high priority in

the typical unit's scheme of things. Without command emphasis, vignette-based leader training falls off the training schedule quickly and quietly. Commanders and unit leaders must be encouraged (or required) to schedule this training, and then conduct it vigorously assuring that AARs are conducted to maximize potential benefits.

Recommendations for Improving Vignette-Based Training

The research team judged that vignette-based training has great merit for training leaders and vertical leader teams. Based on the project's findings, the researchers developed the following recommendations for improving vignette-based leader team training.

Develop a "How to Conduct Vignette-Based Training" video. Technique is largely a matter of individual preference and personality, complemented by learned skills acquired by observation of other trainers and past practice. Since vignette-based training is a relatively new technique, there have been few opportunities for leaders to practice it. A train-the-trainer video could address practical program-level topics such as:

1. What is vignette-based leader development training and why is it valuable?
2. What are the training objectives for which this training methodology was designed?
3. How are leader development needs and leader-team training objectives determined at the unit level?
4. How should the training audience be approached to best achieve training objectives?
5. How should vignettes be selected and modified to achieve training objectives?
6. How can staff and attached units be included in vignette-based leader training?
7. What resources and advance preparation are required?
8. What best-practice examples most facilitate achieving meaningful training results?

The Army used similar videotaped instruction successfully in the past to improve the conduct of company training meetings and AARs. Similar improvement in the conduct of vignette-based training could be achieved if a "How To Conduct" instructional video on the subject were produced and distributed to Army leaders.

Expand the vignette training materials. Some relatively simple steps could be taken to make the leader-facilitator's job easier.

1. A content matrix would help commanders select appropriate vignettes and determine the best method for grouping the training audience to achieve training objectives.
2. It would be beneficial to provide trainers with a description of the advantages and disadvantages of the various methods by which the training audience can be organized.
3. Each vignette should include a carefully crafted sample statement of commander's intent that a leader-facilitator could default to when time-pressed or otherwise unable to prepare for the conduct of training.
4. A list of potential changes to the situation should be included in the "instructions for the leader" of each vignette from which a leader may draw to prompt audience initiative.

5. Multi-media alternatives would enhance the presentation of the tactical situation of vignettes. These might include selected portions of audio and video news reports or movies.

Produce vignettes that continue the tactical situation and commander's intent through successive events. Providing continuity between the vertical leader teams that sequentially execute the training events could enhance the utility of vignette-based training and improve training audience receptivity toward this training technique. The model for vignette-based leader development training provides that Day One training is conducted at the brigade level with battalion commanders and company commanders comprising the target audience. On Day Two, training continues at battalion level with company commanders and platoon leaders making up the training audience. On Days Three and Four training proceeds to company and platoon levels, respectively and the target audience consists of leaders from the next two lower echelons. The program design provides no linkage between the vignettes across the echelons. Consequently, a passage of lines vignette that emphasizes tactical skills might be executed at brigade followed the next day by an unrelated press conference vignette in a different theater of operations at battalion training. This pattern continues to lower levels in the current collection of leader team training vignettes.

This lack of continuity denies subordinate leaders opportunities to develop a deeper appreciation for, and understanding of, the thought processes of higher-level commanders. Lacking links between the training events, subordinates cannot observe how the higher-level commander's intent is modified and complemented by the intent statements of subordinate leaders. Similarly, without linkage subordinate leader teams cannot see their role in accomplishing a larger mission or generate situation-specific issues for the leader teams at higher levels. Producing vignettes that build upon preceding training conducted at higher echelons was a recurring recommendation by IBCT leaders during AARs. Future editions of vignette-based training for vertical leader teams should experiment with linked scenarios common to each set of vignettes.

General Issues in Training Leaders and Vertical Teams

Collective training in field exercises will remain essential for developing vertical leader teams. Effective vertical leader teams display a high level of combined and complementary competence, both tactical and technical. Typically, well-trained vertical leader teams act cooperatively with only minimal command intervention to solve problems and to coordinate actions between vertical organizational levels. Active maintenance of a shared understanding of current status and of coming actions initiated by both assigned and natural leaders in the group also typifies their operations. They also demonstrate mutual trust and shared confidence among their members, not only as expressed by confidence in unit combat capability, but also confidence in the "rightness" of purpose (mission) and vision (intent). These shared competencies and the understanding they encourage enable an effective vertical team to respond quickly and appropriately to changing tactical situations. The traditional mechanism used to create and sustain these qualities has been multi-echelon field training exercises (FTXs). Historically, collective field training has served as the means by which TTPs are validated and synchronized and in which new team members are trained to the group's standards. This will

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remain true in the future. Much of the power of field training events stems from the actual field environment in which the effects of physical exertion, equipment breakdowns, human stress, weather, geographical dispersion, and logistical challenges combine in ways that cannot be replicated by any other means. To train future forces and their leader teams realistically, larger areas, longer training periods, more complex scenarios, and more capable simulations are likely to be necessary.

Computer-based simulation is rapidly increasing in importance for training leader teams. Computer-driven tactical simulations—war games and Command Post Exercises (CPXs)—offer a means of achieving vertical teambuilding and integration at a fraction of the cost associated with FTXs. Simulations also serve to test TTPs at relatively low costs. Simulation-assisted CPXs are particularly effective in developing vertical and horizontal team proficiency because they can present the same tactical situation repeatedly. The repetition enables leader teams to test alternative responses or change key variables, providing the intellectual, emotional, and physical stresses that are essential to effective learning. Through improved quality and capabilities, training simulations will assume an ever more important role in developing high performing leader and staff coordinating teams.

Future forces will be able to leverage simulation technology in FTXs and in actual operations as well. Future simulations will allow them to evaluate alternative courses of action as part of the parallel and collaborative decision-making process. This capability is already emerging in digitally equipped units. Future forces will use advanced simulation capabilities routinely to rehearse and refine tactical operations with far greater fidelity and accuracy than at present. Those simulations will also give vertical leader teams the means to train with dissimilar staffs, units, and civilian agencies either through distributed simulation that allows actual collaboration with others or through virtual simulation that represents absent participants.

While both field training and simulation-based training will remain invaluable methods for future forces, leadership will remain the glue that binds teams together. It takes leadership at each echelon vertically, and at each coordinating node horizontally, to provide the purpose, motivation, and inspiration to unlock the drive, desire, passion, and commitment of the people within the organization. Leaders must set goals, assess progress, maintain focus for leader teams, and guide development of teams and their leaders.

The roles and capabilities of organizations will change because of the development of new weapons and tactics. New capabilities and new roles assigned to traditional echelons will prompt the need for training in the peculiar leader team concerns and characteristics related to each level of command. This will make the need for understanding between echelons as strong as ever and may change the routine collaboration between teams at different levels by altering planning horizons or details of execution. (The introduction of remotely piloted aircraft as sensors in battalions, for example, will change the way vertical leader teams manage airspace, direct fire, control maneuver, and organize intelligence collection and dissemination.)

Leader and leader team tasks will change with level of command and with the mission at hand—a subtlety not fully captured in today's doctrine. Today's leader team training for battalion, brigade, and division levels does not make differences at each echelon explicit and

does not identify unique internal practices for those levels or for inter-echelon cooperation. Future training for leader teams must receive emphasis at least equal to the level of effort defined today while addressing changes that will accompany the Objective Force. Simultaneous multi-echelon training, a fixture in training doctrine for the past 25 years, is likely to remain important if only because available time demands it.

Frequency of team training needs further examination. Past practice offers a point of departure, suggesting that monthly training at each echelon is necessary to sustain basic fighting and staff skills. Leader team proficiency can be established in dedicated leader training sessions and kept current through quarterly exercises. Operator proficiency on C4I systems supports leader team training and can be maintained through weekly operator training for individual soldiers.

A variety of training approaches is important. Commanders should vary their training approaches to accommodate different learning styles, avoid repetition, and provide an environment conducive to developing confidence and trust within teams. While simulations-assisted CPXs and FTXs will remain indispensable, the vignette-based training methodology also appears to offer a particularly valuable leader team training tool. Other effective techniques for developing vertical leader teams may be used to complement vignette-based team training. These include historically based staff rides, vignette driven tabletop or sand table exercises, terrain reconnaissance, specially qualified guest speakers and tactical exercises without troops (TEWTs). All have shown value as leader team training vehicles and an imaginative leader can easily adapt these methodologies to accommodate training a variety of tactical and technical skills. Even unconventional approaches such as physically challenging "adventure training" in new surroundings may have value in assisting a diverse group to coalesce into a cooperative, multi-level leader team. One young captain offered this remark:

> "Teambuilding among newly formed teams needs to be conducted off-site, away from the daily routine and distractions, away from the telephone and the many demands for time and attention. The normal jobsite where we work every day is so demanding that we sometimes can't see one another. We're blind to the fact that the other person is, in fact, another person and not an object to be manipulated, or an obstacle to be overcome."

In all cases, the goal of vertical leader teambuilding should be to strengthen technical proficiency, tactical understanding and functional cooperation among the team members. Some techniques can be tailored to simultaneously train leadership skills, enhance cohesion, develop trust, establish a basis for confidence, and provide an opportunity for mentorship. Any such event that allows individual specialists to inform others of their capabilities and needs, gives the commander an opportunity to teach his own approaches and preferences, and reveals useful information about the group may be of value in vertical teambuilding.

CHAPTER 4. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This report focuses on developing vertical leader teams for the Objective Force. It is based upon interviews and observations of training conducted in the Army's first IBCT and derived from concepts describing the operational environment and capabilities projected for the Objective Force.

The synergistic efforts of vertically aligned leader-and-staff teams, with staff assistants functioning as leaders in their own spheres of action, will take on greater importance in the Objective Force. Because of short decision and reaction times, distributed technical control and responsibilities, and great physical dispersion, future commanders will rely more heavily on the cooperation of subordinate leaders to act decisively and in concert within the context of the common plan and commander's intent. These conditions indicate a need for more effective, more cohesive vertical leader teams to realize the full potential of Objective Force capabilities. Developing such teams will depend on a combination of leader selection, leader training, and leader development to include institutional and organizational training, professional mentoring, and individual and team self-development.

The introduction of new technologies, doctrine, and structure will not alter traditional concepts of leadership. Nonetheless, transformation will bring to the future battlefield new organizations and equipment, a higher tempo of operations, new information processing tools, and novel human challenges. Objective Force leaders and leader teams will have to accommodate differently distributed responsibilities, technologically advanced C4I tools, novel forms of person-to-person interaction, and unprecedented opportunities for higher level commanders and civilian authorities to observe and participate in operations. While basic leadership qualities will remain essentially unchanged, leaders and leader teams will have to adapt to new conditions and training will need to prepare both for these new circumstances.

Leader and leader team training must be a command priority. In today's high optempo environment, command emphasis on leader and team development can easily shift to other things. In the absence of strong command involvement and a structured program, formal training and self-development can become optional. These are conditions that the Objective Force will have to overcome if it is to realize the full combat potential inherent in high-performing vertical leader teams. In units, leader team development must be treated as high priority training with the same command attention as other forms of individual and collective training.

Unit administered leader team development and training programs in the Objective Force should be structured and standards-based. In units of action led by company grade officers, commanders should focus on basic team capabilities and competencies. At higher levels—units of action led by field grade officers—commanders should concentrate on developing high performing leader-teams of field and company grade officers and NCOs and on preparing officers and senior NCOs for team responsibilities at the next higher level.

The ability to communicate effectively will emerge as an increasingly important leader and team skill. While Objective Force commanders will enjoy better and faster communications,

they will still depend heavily on non-technical collective and individual communications skills. Objective Force leaders must communicate effectively to ensure understanding, cooperation, and compliance by subordinate leaders operating with greater autonomy on a dispersed battlefield. Their subordinate team leaders and members must communicate with each other with the same clarity and ease. Fully conveying both understanding and motivation via new technologies will not be possible over sustained operations. Trained cooperation and mutual comprehension between team members and teams at different levels will be just as important and will require deliberate cultivation and concentrated training.

Training to sustain technical skills—both digital and analog—consumes a large portion of the time devoted to leader and vertical team proficiency in today's digitized units. Moreover, vertical teams will need to continue functioning when C4I tools are impaired or unavailable. Training back-up skills represents some of this load and will continue to confront future force leaders (though their back-ups are apt to be more sophisticated than the analog techniques used today).

Similarly, operations involving less technically advanced partners, foreign forces and civilian agencies—conditions that will be encountered frequently in the Objective Force operating environment—will demand that special solutions for external coordination while advanced C4I capabilities remain in use internally. Back-up training to maintain secondary system skills will add another training task to Objective Force schedules but those skills will be critical and vertical leader teams will have to spend time training for them.

Unlike today's battalion and brigade leader teams, those of future forces will also be expected to understand the practices and operations of higher echelon formations. The requirement to respond directly to joint or component headquarters and the license to task theater, other service, and even national assets will tax the capabilities of future leader teams. The need to cooperate closely with foreign military contingents and civil agencies (both U.S. and foreign) without losing team effectiveness will also challenge future vertical team leaders. The Army's training and training support communities will have to prepare Objective Force leader teams and individual leaders with the knowledge and experience base needed to perform competently under such conditions.

Objective Force concepts highlight tactical agility and continuous operations as force multipliers and imply that a constantly changing task organization will be the norm. Initiating combat operations before deployment is complete will require leaders to manage dissimilar concurrent operations (such as deployment, reception, and combat) and to direct forces that expand rapidly, creating a continually changing array of participating leader teams. Better communications and situational understanding will make dynamic teaming and "plug and play" task organization possible, but training will be necessary to assure that leader teams can really function effectively in such an environment.

Command of a fast-moving, widely distributed fighting element that is interdependent with others and that changes its content without ceasing operations will require leaders adept at orchestrating the efforts of a changing set of teams. New teams must be rapidly assimilated and functionally integrated to optimize their contribution to the fight. Leader team training will have

to present this reality early and consistently to accustom future forces to functioning effectively in the midst of frequent organizational change. Institutional training, field training, and simulation-driven exercises should stress changing organizations and the ability to employ a force that changes in structure from day to day to meet emerging, continuously evolving tactical requirements.

In the hands of a well-prepared and skillful leader-facilitator, the experimental vignette-based leader training program implemented in the IBCT can be a powerful team training tool. The technique provides an easily executable way of achieving both basic and advanced leader team training objectives. Its flexibility and ease of implementation make it useful for achieving vertical leader team integration and for promoting adaptive behavior and initiative. Validation of the technique awaits further investigation. However, training audience input points to the utility of vignette-based training for achieving leader development and teambuilding objectives in units throughout the Army.

Based on the observation opportunities of this study, a number of conditions emerged as characteristics of sound vignette-based training:

1. An experienced unit leader must facilitate the training.
2. The preparation, skill, and active involvement of the leader-facilitator greatly affect the quality of the training.
3. Team-wide understanding of the commander's intent is critical to the exercise of group initiative.
4. An unexpected change in the tactical situation can facilitate adaptive behavior and initiative in teams.
5. Feedback, reinforcement, and coaching are important for training value.
6. A directive leadership style inhibits learning.
7. Leaders who routinely opt for tactical solutions that involve applying force often fail to discover better solutions.

A handful of suggestions for improving the vignette library focused on program-level tools, training management features, and training support package (TSP) contents. In addition, the researchers believe that vignette-based training technique can be adapted to exercise the digital communication and MDMP capabilities resident in ABCS. Doing so can simultaneously enhance the development of individual digital skills and the vertical and horizontal integration of system operators.

Multi-echelon FTXs and CPXs will remain important training tools for vertical leader teams. These exercises incorporate realistic factors such as equipment reliability, weather, terrain, and a variety of stressors. To get the most out of the opportunity for vertical leader team training in such exercises, the Army must develop leader team tasks, conditions and standards in its MTPs and direct the systematic treatment of leader team performance in AARs and training assessments.

Simulation-based training will increase in importance and utility for the Objective Force. An improved family of simulations will be necessary to support training of vertically aligned leader teams as well as horizontal staff integration.

The methodology utilized in this project provides a starting point for investigating the personnel selection and vertical leader team training needs of the Objective Force. Extrapolating from current practice and experience to future issues and needs, guided by the Army's vision of future operations, disclosed a number of practical options in this regard. At the same time, this project oriented very narrowly on the IBCT's use of a few training techniques. More research will be necessary to identify the specific leader team dynamics of the future transformation environment.

Recommendations

Much work lies ahead to expand the insights gathered here in order to fully support the Training, Leader Development, and Soldier Issues needs of the Objective Force. Comprehensive data and concepts are needed to define realistic selection standards, specify vertical team training requirements, develop new training methods, and ensure an effective leader development program. Specific steps that can be taken are outlined below.

- Continue research to document personnel qualifications, training requirements, and training techniques for vertical leader teams of the Objective Force.
- Implement improvements in the vignette-based Leader Sustainment Training Program.
- Validate the training effectiveness of the vignette-based technique in terms of effects on subsequent performance and learning.
- Assess the potential value of incorporating vignette-based training in institutional venues (e.g., OES and NCOES programs of instruction).
- Analyze in detail the vertical leader team competencies required to ensure dominance in future military operations.
- Review the literature on team training and performance to identify the most promising approaches for developing and maintaining leader team proficiency.
- Evaluate "best practices" from industry, academia, and other military services for applicability to training vertical leader teams.
- Prepare vertical leader team tasks, conditions and standards and assure treatment of leader team performance in AARs and training assessments.
- Develop a comprehensive model for building and maintaining high levels of performance among vertical leader teams in the Objective Force.
- Develop effective techniques for quickly restoring vertical leader team performance following personnel turnover.
- Assess the influence of unit type (combat, combat support, combat service support) on vertical leader team structure and dynamics.
- Investigate the effectiveness of various types of communication in terms of vertical leader team performance.
- Using statistically valid methods, study the relationship between leader qualifications and vertical leader team performance.

- Integrate the data from multiple research projects that have addressed Training, Leader Development, and Soldier Issues (TLS) needs of the Objective Force to gain greater understanding of vertical leader teaming.
- Determine the potential barriers (cultural, economic, organizational, etc.) to implementing a structured, standards-based leader development program.
- Analyze the simulation capabilities required to support training of vertical leader teams.

The results of this project establish a foundation for creating an effective selection and training program that can assure high performing vertical leader teams in the future force. Extending the knowledge base will ultimately pay valuable dividends in operational capabilities and combat readiness of the Objective Force.

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Appendix A

The Army Program for Leader Development

During the conduct of this study a considerable amount of information was gathered that relates to the Army's program for leader development as described in DA Pam 350-58 (U.S. Army, 1994) and pertinent to the recently released findings of the ATLDP report (U.S. Army, 2001a). The first three findings discussed in this appendix appear also in the main body of the report. They address the need for command emphasis to elevate leader development as a priority training requirement, the need to develop a structured approach to leader training and development, and a prediction that such changes will encounter considerable resistance, perhaps even hostility. The remainder of the material presented in this appendix expands upon three central themes: (1) the importance of mentorship in the development of subordinate leaders, (2) the importance of senior leader communication in promoting an environment conducive to vertical teambuilding and the promotion of initiative, and (3) reinforcing arguments supporting the need for structured, standards-based leader training for both unit administered and self-development programs.

Leader training does not compete favorably with other requirements. On an intellectual level, leaders at every echelon acknowledge the importance of training subordinate leaders. In practice, the urgency of operational requirements takes precedence over the acknowledged importance of leader development. (Indeed, the tendency to label leader training as "professional development" contributes to the tendency to relegate it to a lower priority of activity.) With a single, notable exception, the time set aside for leader development in the units observed was minimal and vulnerable to cancellation or postponement in the event of any conflicting operational or other training requirement. The experience of the research team and remarks made during interviews confirm that leader training ranks low in the priority of activities performed in units of the IBCT and throughout the Army. In the words of one Sergeant Major whose sentiments were echoed by many, "Leadership development programs are personality driven. Most commanders don't do them at all. Those who do them fall into two camps. There are those that just go through the motions and there are those who are really interested in teaching their subordinates. The teachers are rare. *We expect subordinates to work hard to learn their profession. We should expect the leaders to work equally hard to teach their profession.* [Italics added] The leader owes it to his subordinates ... to be technically and tactically competent and he owes them the opportunity to grow professionally... [And yet] it's the first thing cut from the training schedule every time."

This situation must be deliberately remedied if the Army is to transition successfully to truly different organizations, tactics and techniques in the future. Changing it may call for more structured approach to leader training and for making leader training accountable and fully assessed. Mainly, though, it seems to demand more serious commitment on the part of senior leaders.

Structured leader development programs should be standards-based. This finding supports the development of structured programs with specific learning objectives for unit administered and individual leader development. That does not mean that this report or its

findings support the development of comprehensive officer performance standards by branch, functional area and rank as proposed in the *Officer Study* (U.S. Department of the Army, 2001).

Structured leader development programs in the Army are those taught at the institutional training facilities where learning objectives are clearly defined and training is standards-based. Otherwise, leader development is unstructured and there are no established terminal learning objectives. In practice, the lack of structure and clearly identified learning objectives results in widely dissimilar leader development programs from unit to unit. Leader development is perceived as discretionary. Lacking structure, neither the unit commander nor individual have the necessary "road map" to guide the development process and against which to track progress. Without learning objectives, neither the commander nor the individual have the mechanism to determine whether the conduct of the leader development event achieved its intended purpose.

The paragraph that follows suggests how structure and learning objectives might be implemented in a professional self-development program. It is provided to illustrate that learning objectives and structure can be applied to an existing program. It also illustrates that structure allows the creation of performance requirements and standards that can be ratcheted-up, or down to achieve program objectives. It follows that program objectives need to be clearly defined to determine the appropriate degree to which structure is implemented and specific performance requirements are specified. The Army Chief of Staff's recommended professional reading list is used as the example.

The Chief of Staff's recommended professional reading list is available on-line. The books are not. For each title a brief description is provided that contains information about the book's content and why reading it is a worthwhile endeavor. The latter could easily be expanded and restated as learning objectives. To a degree, structure for the reading program is provided because it is broken down by grade. The titles could be organized in an ascending, progressive order where one reading expands upon, presents an opposing view, or reinforces concepts from a previous reading. Organized in this fashion, the individual (and his commander) would be provided a "road map" that describes a sequential professional reading program against which progress can be measured. Structure can increase the value of this leader development tool by providing study guides that help the reader identify key concepts that support learning objectives. These, too, could be made available on-line as could the books, themselves. Structure can be provided with specific performance requirements by making the professional reading program mandatory *versus* recommended and by electronically providing feedback to the soldier and his commander. If completion of required professional reading were determined to be necessary for promotion or specific assignment eligibility, then feedback could be provided to U.S. Army Personnel Command (PERSCOM) to determine promotion and assignment eligibility. Again, this is not a recommendation, but merely an illustration of how structure might be added to an existing program.

Transitioning to more structured leader training may encounter resistance. Long-held attitudes and beliefs about the unit-specific and individualized approaches to leader training could work against efforts to build greater structure into such programs in units. In particular, efforts to develop a more structured approach and/or establish standards for leader training could suffer from reluctance and even hostility. While widely acknowledged as being important, in

practice leader development is viewed as a discretionary activity, something attended to as time and opportunity permit. Adding structure and standards will help remove leader training from the "discretionary" column of things to do and put it solidly into the "required" column. In doing so, standards must be applied. This would entail accountable instruction, external program evaluations, and, perhaps, the use of performance data in assignments to leadership positions. All these run counter to the Army culture and could only be implemented by determined leadership at the highest level.

Mentorship is critically important in developing subordinate leaders. DA Pam 350-58, *Leader Development for America's Army* (U.S. Department of the Army, 1994) describes 12 leader development imperatives aligned within a three-pillar leader development model. The three pillars upon which the model is based are Institutional Training and Education, Operational Assignments and Self-Development. A fourth pillar is needed - Mentorship. It is not that mentorship is absent from the model presented in DA Pam 350-58. Elements pertaining to mentorship are included as commander/supervisor responsibilities under the Operational Assignments pillar. This study concludes that the process of mentoring, coaching and communicating by more senior commanders who serve as both teacher and role model is so important to the development of subordinate leaders that it justifies separate distinction and more importantly, special emphasis.

Mentorship by more experienced and knowledgeable leaders is the essence of applied leadership in the important business of developing subordinate leaders. Mentorship draws heavily on each of the four competencies that a leader must display. These are described in FM 6-22 (22-100), *Army Leadership* (U.S. Department of the Army, 1999), as interpersonal, conceptual, tactical and technical skills. Of these, the effective mentor relies most on interpersonal skills. Teaching, coaching and mentoring are all about communication. In the words of one senior officer, "Leaders cannot do enough of it (communication). There will always be a lack. Subordinates don't hear enough from or interact with their superiors often enough to become imbued with an understanding of his priorities, motivation and vision. If they knew these better, much of the uncertainty in their lives, the vagueness and the self-doubt in which they operate would dissipate. They'd be more confident and more likely to demonstrate the traits sought for Objective Force leaders—adaptability, flexibility and initiative—because they'd know their commander's intent, how he thinks, and why... Whether teaching the intricacies of a passage of lines or discussing the menu for a holiday celebration in the dining facility, it is the communication that is important. It enlightens, provides insight, defines the operational environment, but most of all, it contributes to understanding."

The technical aspect of mentoring also merits special consideration for Army transition. In introducing information-based systems, Army vertical teams experienced the odd phenomenon of younger leaders knowing more about those systems than more experienced leaders. Deliberate technical mentorship training for older leaders is likely to pay dividends when future technical shifts leap ahead of predictable development expectations.

Coaching, teaching and mentorship develop trust and teamwork. Army leaders must be the advocates who enable superior performance in much the same way that a coach identifies talent, develops skill and exploits the strengths of individual team members. Developing skills

and exploiting talent maximizes the individual's contribution and speeds his integration as a valued member of the team. The coach encourages, cajoles and rewards to establish trust, increase performance, recognize value and instill confidence. These are necessary to unlock the drive, desire, passion and commitment of the people within the organization. Communication is the mechanism that allows the coach to know his players and the commander to know his subordinates. Knowing them enables the commander to assess their strengths and developmental needs. It is the means by which the commander can identify talent and discovering those talents, develop them. One senior officer offered that, "The degree to which a commander trusts his subordinates is directly proportional to how well he knows them, and *vice versa*. The time spent in teaching, coaching and mentoring subordinates is well invested. It allows the insight and understanding for both parties [that is] essential to vertical and horizontal team integration."

Active coaching and teaching by properly prepared leaders of vertical teams assists in establishing common understandings between echelons and helps dispel uncertainty. Young members of the leadership team in particular need assurances that they know their seniors' priorities and preferences. The "two levels down" approach used in IBCT leader training is a useful approach for creating this trust, confidence and preparation for participation in team actions.

Initiative, adaptability and decisiveness are enabled by understanding. Initiative and decisiveness are traits that are most likely to be exhibited by those who understand the mission, the desired end-state and are willing to accept risk. Understanding the commander, his intent, and vision enables subordinates to take risk, recognize opportunity and act with initiative. A battalion commander advises that, "Without this understanding [of the commander's intent], the display of initiative and decisiveness is not so much a question of risk taking as it is a question of guessing. Understanding the commander's purpose, vision and desired end-state allows [subordinates to act with] initiative within intent. The absence of understanding invites disaster... The burden of ensuring that his intent is clearly articulated and understood resides with the senior commander. He must do everything within his power to clearly communicate his vision to subordinates." Conversely, it follows that subordinates should be able to voice their concerns when they are uncertain about intent. Better yet, they should be encouraged to do so. Uncertainty is a clear signal that their interpretation or understanding of the commander's intent is not sufficient to warrant their confidence. It is a clear signal that the commander must do more to ensure understanding.

Effective communication is the key to avoiding isolation, uncertainty and ambiguity. Leaders who recognize the critical importance of communicating with their subordinates work hard to ensure understanding. They seek opportunities to open channels of communication. Observations of training in the IBCT identified both ends of the spectrum—those that apparently do understand and those who apparently do not. While discussing vignette-based leader training, a senior officer had this to say about leaders who understand the importance of communicating with subordinates: "I would predict that they'd embrace the vignette-based leader development process first as another means to effective communication . . . The sad part is, those who would benefit most from a program such as this—those who do not see the criticality of effective communication—will decry the time and effort spent as being unproductive or better devoted to other things. They are wrong. Leaders would be well advised to communicate with their

subordinates at every opportunity and with all the skill they can muster. Even then, only half will hear their message and only half of those who hear will understand. Leaders cannot communicate enough or often enough. My advice to battalion and brigade commanders is simply this: Engage your subordinates. Speak to them and allow them to speak to you. In the absence of engagement there is isolation. In isolation there is uncertainty and ambiguity. By not engaging subordinates consistently and often, leaders contribute to an operating environment rife with uncertainty. By not engaging them, leaders inhibit their development and stifle their initiative."

Professional dialog builds trust. It is probably right that in communicating with subordinates for the purpose of leader development, the focus should be on warfighting. But it should not be exclusive to that alone. Understanding the Army culture, service ethic and values should be important developmental objectives for all leaders, as well. The idea is to develop people who believe in and truly care about this institution. A General Officer concludes that, "Communication is the means by which shared values, trust, respect and commitment are nourished and encouraged. These are essential for the conduct of professional dialog without threat to person or position."

To the young Captain or Lieutenant, battalion and brigade commanders are fonts of wisdom, experience and knowledge. These commanders are also defining elements of the subordinate leader's operational environment. Subordinates need and want to understand that environment and they want to succeed in the environment their commanders define. The recently released ATLDP *Officer Study: Report to the Army* (U.S. Department of the Army, 2001) finds that, "Officers believe mentoring is important for both personal and professional development, yet a majority of officers report not having mentors." The report recommends that the Army "develop doctrine for mentoring in FM 6-22 (22-100), *Army Leadership* [U.S. Department of the Army, 1999]. Teach it throughout OES, so junior officers understand what mentoring is and how they should be mentored, and field grade officers understand how they should be mentoring junior officers. Place emphasis in Pre-Command Courses so future battalion and brigade commanders understand Army doctrine, their role in mentoring, and the expectations of officers they will mentor." This research team strongly supports this finding and recommendation.

The focal point for leader development is the battalion commander. Asked what assignment they found to be the most rewarding and meaningful of their careers, each of the senior officers queried responded in kind, "Battalion Command." While they gave different reasons for their response, the rationale in each case pointed to two central themes. One of these is best reflected in a General Officer's remarks that, "Battalion command is at the juncture where the vectors of authority, power, experience, influence, resources, autonomy, skill sets, time, span of control, knowledge and training all converge into focus. The battalion commander 'owns' them all. Battalion command was a culminating point of all that had transpired and the privileged duty I had prepared for all my adult life. I was never so well prepared for anything that came before, or after." The second theme described battalion command as a gratifying experience because of the ability to positively influence quality of life, improve training and readiness, and attend to the professional development of subordinate leaders.

The practical limitations of span of control also point to the battalion commander as the necessary focal point for leader development. A former brigade commander lamented, "I had five battalions with 27 Captains assigned to company level command positions that I senior rated. When it came time to do their efficiency reports, I had to rely heavily on input provided by their battalion commanders. Though I tried hard to know each of them better, in fact all I really had to go on were general impressions formed by infrequent contact. Most of that contact was in a group setting that didn't lend itself to any real dialog. For the most part, my contribution to their professional development came in the remarks I made during QTB (Quarterly Training Briefings) and when I visited them during the conduct of training. While visiting various training sites kept me busy, from their perspective they saw me very infrequently and for some, hardly at all." The problem of span of control and infrequency of contact is exacerbated when subordinate units are widely dispersed, as is the case in many non-TO&E organizations. The bottom line is that the span of control for brigade commanders is simply too great, the audience too large, for individual counseling and mentorship to be a realistic objective.

Leader development must be structured and top driven. This theme was expanded upon by a Lieutenant Colonel, a former battalion commander, who said, "For all the high-sounding rhetoric about the importance of leader development, there has been precious little in the way of demonstrated commitment. I do believe that action speaks louder than words and the lack of action and commitment by senior leaders sends the clear message that leader development isn't very important, after all. The words are there but without action and commitment, it's only words and easy to ignore." Another opined that, "Experience tells me that if you don't put a structured program in place, the quality of the [leader development] training becomes suspect and it may not happen." These and similar statements argue for the creation of a more formalized leader development program that can be executed at the unit level. It is not clear whether such a program should be standards-based as advocated in this report and the *Officer Study* (U.S. Department of the Army, 2001), take a more generalized approach as in developing a series of leader development training support packages (TSPs) from which a commander may select, or follow the experimental model of vignette-based leader development training practiced in the IBCT. One thing, however, is clear: If leader development is not command sponsored and left as an unstructured program, it will not happen in the future with any greater degree of fidelity than it's happening today.

Junior leaders require special assistance in their leader development responsibilities. Sound vertical team training comes more easily to experienced leaders. Lieutenants and new warrant officers and sergeants have the same leader development responsibilities for their vertical teams as more experienced leaders do. They lack, however, the experience in training, mentoring and teaching older NCO leaders. Additionally, failures in team-building efforts can have the opposite of the intended effect, weakening the leader's position and the team's coherence if leader training is done poorly. Concentrated efforts to prepare lieutenants and new warrant officers and sergeants for their leader team development responsibilities are therefore justified.

Command involvement is needed to monitor and guide individual leader self-development efforts. Leader Development for America's Army, DA Pam 350-58 (U.S. Department of the Army, 1994), strongly emphasizes the importance of self-development and rightfully identifies it

as one of the pillars in its leader development model. It also fixes responsibility for self-development on more than the just the individual: "Commanders enhance leader development by ... helping them prepare and execute developmental action plans to achieve maximum growth" (Chapter 1, p. 3). Again with one notable exception observed in the IBCT, in the experience of the research team and as confirmed during this study, commanders in the field are not helping subordinate leaders prepare and execute professional development action plans. If they did, then an individual's self-development would not be entirely self-directed, nor would it be unnoticed. In the absence of this help from the commander, it is fair to say that self-development in the Army today is almost entirely self-directed and whether it takes place, or not, is unnoticed because nobody's watching. The question becomes: How well is self-directed self-development working? This study finds that it isn't working except in a few isolated cases. There are a few junior and mid-grade officers that actively study the profession of arms, leadership, tactics and doctrine, geography, the culture and military-political make-up of potential adversaries, etc. For the majority, however, the total extent of professional study and self-development is limited to reading *Army Times* and reviewing doctrine and policy pertinent only to their immediate, routine operational requirements. In other words, self-directed self-development is an oxymoron when applied to the large majority of junior and mid-grade officers. Self-directed equates to optional and opting for an increased workload does not compete well in the spectrum of other activities that place demands on time and attention.

Distance-learning technologies and alternative media could play a significant role in leader development. The study of history and successful leaders is important to professional development. The traditional means to acquire an appreciation of history's lessons has been to read authoritative accounts—history books and lately, historical novels. Commanders have used other media to teach the lessons of history. The format of *The Big Picture* series highlighting various campaigns during World War I, World War II and Korea that was produced by the Army and shown on public television has been followed closely by a more contemporary but similar series, *Unsung Heroes*, that currently airs on The History Channel and Discovery. In many commands, the movies *The Longest Day, Patton, Gettysburg, Glory* and *Saving Private Ryan*, and television series such as *Band of Brothers* have been "required viewing." In some commands these became the historical examples and subjects that inspired the professional discussion and dialog sparking the unit's emerging professional development program.

Leaders at all levels can benefit from the graphic portrayal and high drama that capture attention and elicit emotional response. The media alternatives do not end with the motion picture industry. Vignette-based leader development programs might benefit from footage from news reports. Books, including doctrinal publications, and important speeches can be reduced to audiotapes or digital recordings that can be downloaded off the Internet. Distance learning technologies enable interactive dialog with acknowledged experts, other leaders or instructors. These technologies may one day be so common as to be available in every dayroom and even in company command posts while deployed in local training areas. The bottom line to this discussion is that professional development does not need to be boring. Exploring alternative means to promote learning would be a worthy pursuit.

Appendix B

INTERVIEW PROTOCOL—IBCT Warfighters
Objective Force Training Research Project
(PT No. 60-34)

INSTRUCTIONS FOR FACILITATOR

1. Whenever possible, give the interviewee(s) a read-ahead copy of this protocol a couple of days in advance, substituting the "Read-Ahead Package" sheet in place of the two "Instructions" pages.

2. As the session starts, request permission to tape record the interview, then have the interviewee(s) read and sign the separate Privacy Act form.

3. Explain the purpose of this interview session (see next page). Determine how long the interviewee(s) can spend in the interview.

4. At the start of the tape recording, state the project name and the date.

5. Lead the participant(s) thru the interview questions contained in this protocol, in dialog mode. Work thru as many questions as you have time for.

6. Adjust to the interests and strengths of the individual or group—follow up their comments, pursue detail if something's especially important to a participant.

7. In a group, try to encourage everyone to participate. Use your judgment to draw every participant into the dialogue.

8. Keep an eye on the clock so you can end on time.

9. Within 2 working days after the interview, Fedex the tape to the TRW-Killeen office, then subsequently review the transcript prepared by Wilma. If you add comments or annotations of your own, put them in brackets and tag them with your initials.

10. Put your own insights and thoughts in a Microsoft® Word file within 48 hours.

INSTRUCTIONS FOR PARTICIPANTS

We are conducting this interview to understand the needs of the future force in terms of warfighter development, team training, and selection factors. We are looking at ways to build more efficient teams—both vertically, as among several echelons of command, and horizontally, as among system operators within an echelon. Your experience in the IBCT provides an opportunity to capture important insights.

What you share with us will help pave the way for future units undergoing Army transformation.

We'll try to follow the questions inside this guide to structure the session. At the same time, we want to be sure to cover things that are especially important to you.

The results of this interview will be used for training research purposes only, mainly to identify selection and training issues for the future force. We will not identify your comments by name.

Do you have any questions before we start?

INTERVIEW QUESTIONS—IBCT Warfighters

ℰ℧ ------------- ℭ℘

BIOGRAPHICAL DATA

1. Experience with the IBCT:

   a. How long have you been in the Army?

   b. How long have you been assigned to the IBCT?

   c. What is your current unit and duty position?

   d. How long have you been in your current duty position?

2. Knowledge relevant to the Objective Force:

   a. What previous assignments did you have in digitally equipped units (e.g., EXFOR)?

   b. What experience do you have with automated C4I systems (FBCB2, ASAS, AFATDS, CSSCS, MCS, FAADC2I, or their forerunners)?
   [Note to Facilitator: query about sub-systems (e.g., RWS, FED) as appropriate.]

   c. How have you gained your knowledge of the Objective Force? (Reading, briefings, etc.)

   d. How have you gained your knowledge of the Future Combat Systems?

ℰ℧ ------------ ℭ℘

TRAINING ESSENTIALS

We're asking you to identify one task that is most critical for your operations in the IBCT, then consider different aspects of that task in a series of related questions. Please keep in mind the new doctrine, equipment, and organization of the IBCT.

As we work through the questions, we'd like you to focus on the group that fits your current position best:
- Leader (member of command group or equivalent).
- Staff member (primary or special staff officer or NCO).
- ABCS system operator (primary duty).

3. IBCT Tasks:

   a. In the IBCT digital command and control environment, what is the most critical task that leaders (*or* staff members *or* system operators) must perform?

   b. How does this task relate to the missions an IBCT combat unit (*or* CS *or* CSS unit) performs?

   c. How does the task differ from similar tasks performed in conventional units? Consider:
     • The impact of new equipment (for example, digital systems).
     • Changes in unit organization.
     • The impact of new doctrine and tactics.
     • Task difficulty, complexity, and workload.

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4. Performance Factors:

   a. In accomplishing the task you identified, what main components (sub-tasks, steps) of the task are critical for performing it effectively?

   b. Given the reliance on automated C4I, what traits does a leader (*or* staff member *or* system operator) need to perform the task well? Consider:
     • Knowledge (concepts, facts, rules, and procedures that the warfighter must know).
     • Skills (math skills, communication skills, social skills, motor skills, etc.).
     • Aptitudes (intellectual capabilities such as spatial visualization, logical reasoning).
     • Attitudes (motivation, commitment, innovation, flexibility, discipline, etc.).

   c. If you had absolute authority to change things, what criteria would you use to select IBCT leaders (*or* staff members *or* system operators) who will have to perform the task?

   d. Considering the essential traits you've identified, what's the best way for the Army to develop those traits among its leaders (*or* staff members *or* system operators)?

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5. Task-Specific Training Requirements:

   a. In the high-tech environment of the IBCT, what are the training requirements that enable effective performance of the task you identified? Consider:
     • *Individual* leaders (*or* staff members *or* system operators).
     • *Teams*, either vertical leader/staff teams *or* horizontal teams (e.g., Bn staff).

   b. In view of the training requirements you just identified, would you rate the task as difficult to train or easy to train, and why? Consider:
     • Training of *individuals*.
     • Training of *teams*.

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6. Task-Specific Training Methods:

   a. For the task and sub-tasks you identified, what are the best training methods to ensure effective performance in the digital command and control environment? Consider:
- Training of *individuals* (leaders *or* staff members *or* system operators).
- Training of *teams*, either leader/staff teams *or* horizontal teams (e.g., Bn staff).

   b. If you were in charge and had unlimited resources, how would you change the way the Army trains leaders (*or* staff members *or* system operators)?

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7. Training Support Requirements:

   a. What new training support does the IBCT need? Consider requirements and challenges regarding:
- Embedded training.
- Training simulators.
- Computer-based instruction or computer-based training.
- AAR capabilities (including performance measurement).
- Training support packages.
- Training resources (funding, OCs, contractor personnel, etc.).

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8. Objective Force Training:

   a. For the task you identified, how might training change for the Objective Force? Consider:
- Mission relevance.
- Sub-tasks.
- Traits and selection factors for leaders/staff/operators.
- Training requirements.
- Training methods.
- Training support.

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9. Training Methods:

   a. In the IBCT, what was the most valuable training you received? Why? How would you improve it? Consider:
   - Training of horizontal (single-echelon) teams.
   - Training of vertical (multi-echelon) teams.
   - Training in integrated multi-echelon exercises (e.g., battalion/company).

   b. What was the least effective training you received? Why? If it needs to be continued, how would you improve it?

   c. What *new* training techniques or events has your unit developed or adopted? Consider:
   - Training of horizontal teams.
   - Training of vertical teams.
   - Training in integrated brigade/battalion exercises.

10. Leader/Soldier Enablers:

   a. For successful IBCT operations, how much knowledge do you need about operations and needs of other functional areas? Consider your role in:
   - Vertical teams.
   - Horizontal teams.

   b. What have you learned about selecting and assigning IBCT warfighters that would be important for the Objective Force?

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OTHER COMMENTS

11. What other comments do you have about IBCT training, leader/soldier development, and warfighter traits?

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12. If you could change one thing about how your IBCT training was conducted, what would that be?

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Appendix C

OBSERVATION GUIDE:

VERTICAL TEAM TRAINING

General Instructions: Read this guide thoroughly and carry it with you while conducting observations of vertical team training.
- Observation of vertical team training will be accomplished during the IBCT execution of their Leader Sustainment Training Program (LSTP).
- LSTP sessions are scheduled 19-22 June and 17-20 September 2001.
- SMEs will observe all eight days of scheduled vignette-based LSTP training to obtain the requisite number of observations.
- Observations from a minimum of 12 observer-days are required, equitably distributed by unit type (Infantry, RSTA, Field Artillery and CSS) and echelon (brigade, battalion, company and platoon) IAW Table B-1, of the Research Plan.
- In the event of cancellation, or if for any reason SMEs are unable to observe this training, other vertically aligned training events may be used for data collection subject to coordination with and approval of the DO-COR.

Technical Objectives: (Provided for reference.)
- Determine training issues for leaders and soldier/operators relevant to FCS and Objective Force.
- Identify and analyze effective training techniques, methods and problems in vignette-based vertical team training and horizontal training.
- Identify the knowledge, skills and aptitudes (KSAs) associated with the performance of tasks being trained and with effective training of those tasks.

Questions of Interest: The answers to certain questions constitute essential items of information. While observations are of the current training of the IBCT, be mindful and alert to activities, statements or behaviors that may provide insight into the training needs and leader development needs of Objective Force. Never fail to document information pertaining to the questions that follow:
- What are the future training requirements for the Objective Force?
- What training methods/techniques are required to support the Objective Force?
- What new training support will the Objective Force need?
- What KSAs (for warfighters and trainers) are needed for effective performance of the Objective Force?
- What IBCT practices and lessons can facilitate training in the Objective Force?
- How do training requirements, methods and KSAs vary across different echelons and types of units?

Rules of Engagement:
- Do not interfere with, or become a distraction to the conduct of training.
- Do not attempt to influence, participate in, or assist in the conduct of training.

- Do not volunteer opinion, or offer comment on the training being conducted.
- Do not assume welcome. Coordinate your presence at training in advance.
- Do not use a tape recorder to record observations. Their use (the sound of your voice) is distracting to trainers and the training audience. Use written notes, instead.
- Be discrete in taking notes. Some people are intimidated or irritated by it.
- Be discrete and unobtrusive in manner, speech, presence and appearance.

Guidelines for Data Collection:
- Be observant and sensitive to the information requirements described in the questions of interest, above. Ensure that no question of interest is overlooked.
- Take time to take good notes using the data collection sheet provided. Use as many sheets as needed to capture observations.
- Capture the observation or insight with sufficient detail to accurately reconstruct the essence of the thought/observation later.
- Notes should be factual and capture who-what-when-where-why-how information.
- If possible, obtain copies of pertinent written or graphic materials.
- Do not focus on any one individual or group. Adjust your vantage point to obtain as broad a base for observation and input as circumstances will allow.
- Record your own conclusions and thoughts, clearly marking them as your own.
- It's OK to ask questions of trainers and participants, but minimize interference.
- Do not organize or process observation data in the field. Do it later in the office.

Privacy Considerations:
Attributing quotable material to a person by grade and position is generally sufficient; in which case, a privacy statement is not needed. When it is necessary to attribute comments to a specific individual, have him/her sign a privacy statement. When in doubt, obtain a signed privacy statement. Keep a quantity on hand.

Documentation:
- Collect data in the form of hand written notes, based on the questions of interest.
- Organize and consolidate handwritten notes into Microsoft Word master files created for this project. Do it right away, while the information is still fresh.
- Save your notes twice. Keep one set on file, saved under the date-time-group that the training occurred. Use the other to cut and paste data into appropriate folders.
- "Tag" each data point with a shorthand note that tells when the information was obtained and the source. Examples follow:
  1. 2206//PLTSGT//INCO The information was obtained on 22 June from a Platoon Sergeant in an Infantry Company during LSTP training.
  2. 1906//FGO//FA This information came from a Field Artillery Field Grade Officer on 19 June, the first day of the LSTP training.
  3. 2106//CDR//CSSCO This annotation says that a CSS Company Commander is the source of the information.

4. 2006//TRAINER//CIV This information came from a civilian contract trainer.
5. 1906//SME//COX This information came from TRW SME Jim Cox
- Data obtained outside of the context of a training event will be annotated in plain text with the source and circumstance under which it was obtained.

Desired Results of Training Observations: Clear, concise SME notes suitable for entry into a compiled data file for analysis.

Technical Point of Contact: Dr. Bruce Leibrecht

Attachment 1: Observed Training Data Collection Sheet

OBSERVED TRAINING DATA COLLECTION SHEET

Type of Training: <u>Horizontal</u>   <u>Vertical</u>   Date: _____

Unit(s) Involved/Observed: _____   **Name of Event:** _____

Observer: _____   **Location:** _____

	NOTES:
What concepts, tasks, or skills are the most difficult to teach and master? **What are the most effective training techniques/technologies?** **What are the least effective training techniques and/or technologies?** **What tasks, subtasks, and functions are being trained?** **What novel training approach, workarounds are being used?** **What KSAs are needed for effective performance?** **What IBCT practices and lessons have value for training Objective Forces?** **How do training requirements, methods and KSAs vary across different echelons and types of units?**	_____ _____

Appendix D

List of Documents Reviewed

Boller, M. (2000, September-October). A common understanding for transformation brigades. *Military Review*, 29-38.

Brigade Coordination Cell (2001a). *Leadership team training vignette development* (Briefing slides, unpublished). Fort Lewis, WA: Battlespace Integration Directorate, Brigade Coordination Cell.

Brigade Coordination Cell (2001b). *Parallel and collaborative MDMP* (Briefing slides, unpublished). Fort Lewis, WA: Battlespace Integration Directorate, Brigade Coordination Cell.

Brown, F. J. (1999). *Army learning white paper: Preparation of Leaders*. Alexandria, VA: Institute for Defense Analyses.

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Campbell, C. H, Ford, L.A., Campbell, R. C., & Quinkert, K. A. (1998). *A procedure for development of structured vignette training exercises for small groups* (ARI Research Product 98-37). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Campbell, C. H., Quinkert, K. A., & Burnside, B. L. (2000). *Training for performance: The structured training approach* (ARI Special Report 45). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

DeRoche, L. M. (2001). Digital training—What's the big deal? *CALL Newsletter*, No. 01-18, 35-48.

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Leibrecht, B. C., Johnston, J. C., Black, B. A., & Quinkert, K. A. (In Preparation). *Managing Force XXI change: Insights and lessons learned in the Army's first digital division* (ARI Study Report). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Leibrecht, B.C., Meade, G. A., Schmidt, J. H., Doherty, W. J., & Lickteig, C. W. (1994). *Evaluation of the Combat Vehicle Command and Control system: Operational effectiveness of an armor battalion* (ARI Technical Report 998). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Leibrecht, B.C., & Winsch B. J. (1997). *Developing a structured training program for the Experimental Force (EXFOR): Lessons learned for simulation training and Force XXI*. Fort Knox, KY: TRADOC Systems Manager for Force XXI.

Lynch, R. (2001). *Lessons learned: Commanding a digital brigade combat team* (IDA Paper P-3616). Alexandria, VA: Institute for Defense Analyses.

MacDonald, J. (2000). *Amended statement of work for Initial Brigade Combat Team leader development program*. Ft. Lewis, WA: Brigade Coordination Cell.

Miller, W. (2000). *Land Warrior: Work in progress* [On-line]. Available: http://www.mt2-kmi.com/features/6_5Art2.cfm. Military Training Technology Online.

Reinwald, B. R. (2000, September-October). Tactical intuition. *Military Review*, 79-88.

U.S. Army War College (2001). *Army Transformation Wargame 2000: Vigilant Warriors 01*. Carlisle Barracks, PA: Author.

Appendix E

Sample Vignettes from the Leader Sustainment Training Program

Vignette Title:	Clear a Building (034)
Echelon:	Infantry Platoon
Leader Skill:	Tactical
Target Audience:	Platoon Level Leaders
Methodology:	Seminar/Small-Group Discussion

Vignette Instructor Guide

1. References

- FM 22-100, Army Leadership, Aug '99, Chapter 4, SUBJ: Direct Leadership Skills, pp. 4-47, Tactical
- FM 90-10-1, An Infantryman's Guide to Combat in Built –Up Areas.
- FM 7-10X, IBCT Infantry Company
- ARTEP 7-8-DRILL
- MTP 20-3-3006, Search a Building
- IBCT O & O, 30 June, 2000 (Final)
- IBCT SOP(s)
- IBCT Tactical References

2. Purpose.
This vignette was designed to exercise the tactical skills required to clear a building.

3. Instructions For Leader

a. This vignette is designed to assist in the development of sound judgment, understanding decision parameters of the higher commander, using creative thinking in problem solving and recognizing the underlying short and long term issues that may impact a unit in this scenario. Small and large group discussions should develop innovative ideas and concepts to address the "non-standard" and/or "non-doctrinal" situations surrounding the situation presented in this vignette.

b. Prior to conducting this training, familiarize yourself with the contents of this vignette and the listed references. Also, review your platoon's communications TO&E and ensure you bring an updated listing of the communications available to your platoon. Compare this to the architectures we have provided. As appropriate, provide your training groups copies of excerpts from those references that you feel are especially relevant to your particular training objectives. As a minimum, have at least one copy of all appropriate references at your training location. You will also need to provide students copies of the training support material contained in the annexes accompanying this vignette.

c. Determine the training support materials you will need for your training, such as butcher paper, magic markers, overhead projectors, etc. and ensure that all support materials are available at the training location.

d. Explain the purpose of the vignette and provide copies of Annex A (Soldier Support Material), the reference list and/or appropriate excerpts to your audience. Using an overhead projector, butcher paper, or chalkboard, provide the scenario to your audience. Ensure that you provide them copies of appropriate supporting materials or that those materials are available for them to view. Read the first requirement to your audience, clearly stating the expected outcome(s) of their small group discussions. Provide the groups with start and end times for the requirement (can be adjusted if required). Issue points designed to generate discussion on this topic are provided in the requirement paragraph. The instructor has the option of either assigning selected points to specific groups, pick specific points for each group to address, or have each group address all discussion points (time available may be a factor). Concluding large group discussions should highlight innovative concepts and/or strategies to properly address the issues presented by this vignette. This is an excellent opportunity for junior leaders to address leader issues one to two echelons above their positions.

Vignette Title: Clear a Building (034)
Echelon: Infantry Platoon
Leader Skill: Tactical
Target Audience: Platoon Level Leaders
Methodology: Seminar/Small-Group Discussion

Vignette Instructor Guide (Con't)

e.   Divide your training audience into small groups of leaders of equal rank or positions. Each group should discuss issues surrounding the situation presented in this vignette. In some cases, identification of 2d and 3rd level effects is appropriate. It may be appropriate to appoint an individual within each group to be responsible for guiding the group through the discussion points and analysis of the situation presented by the vignette. (NOTE: this is a suggestion, NOT a requirement)

f.   After an appropriate time, reconvene into one large group and have a representative of each small group present its concept or approach for resolving the issue highlighted by the vignette and discuss the pros and cons of each group's concept. Concluding large group discussions should highlight the leader challenges embedded in this vignette and the dynamics of developing new and innovative solutions. The IBCT leader may use these discussions to enhance subordinates' understanding of his leadership style and preferences.

g.   KEY TALKING POINTS. These talking points are provided to the instructor to supplement ideas and issues addressed by the small groups in reference to the situation presented in this vignette.
  - Considering the current intelligence, what additional precautions or methods could be used to enter the building? Smoke to obscure, and blasting your way into the building requires permission from the company commander IAW the ROE.
  - What did your squad leaders decide about the sewer? One assumption could be that it is and exit and entry point that must be covered by fire.
  - Did you begin to run out of enough men to accomplish this mission to clear this building?
  - Has the platoon used your IAV's to provide additional support to protect your search and security elements?
  - What other ways can you take the enemies advantage of being in a defensive posture awaiting your arrival?
  - When do you go to the company commander with a request for additional support and possibly gain some MGS support to allow you more firepower and men to accomplish your mission?
  - Did your platoon adequately determine how you would employ your squads with the proper techniques to clear rooms?
  - What did you decide about the entry and exit into the sewer system?
  - What measures should be taken for casualty reporting?
  - What roles could non-lethal assets such as a PSYOPS Loudspeaker Team play in this situation?

h.   For the Urban MOUT mission the IBCT Platoon Leader should consider the following:
  - The search element attempts to enter the building IAW ROE and commander's guidance.
  - Establish an entry point where subsequent entry after departure will be difficult for locals (for example, second story window, trap door in roof)
  - The entry team should emplace signal devices visible to external security and support elements to indicate the floor on which search team is working.
  - Follow standard search procedures and develop a search pattern.
  - An example of individual responsibilities are as follows:
    - Personnel scan their assigned areas during movement. (Scan area is in three dimensions).
    - Point man checks for trip wires.
    - Point man opens doors and pauses behind wall before entry.

Vignette Title: Clear a Building (034)
Echelon: Infantry Platoon
Leader Skill: Tactical
Target Audience: Platoon Level Leaders
Methodology: Seminar/Small-Group Discussion

Vignette Instructor Guide (Con't)

- Team enters room using a high-man, low-man technique with weapon muzzles tracking where they look.
- Detainees are brought to civil authority or interpreter to make an initial identification.
- Detainees are kept under surveillance (or guard) until civil-police, military police, or military Intelligence personnel assume responsibility for them. Detainees are properly tagged with circumstances or details.
- Prohibited items are initially checked for booby traps.
- Weapons are examined by knowledgeable personnel, cleared or otherwise made safe for transportation. Properly tagged with location and recorded with serial numbers for future reports.
- Identify key items required when encountering a barricade, booby trap, trip wire, or suspected explosives. Some examples are as follows:
  - Engineer team or explosive ordnance disposal team (preferred) is brought to site.
  - Search activity on floors above and below are suspended until demolition device is cleared or deemed safe.
  - Search team vacates floor unless needed to provide security.
  - Engineer team disables barricade piece by piece, disarms booby trap, or otherwise makes site safe to continue search.
- When the building is announced as clear, some of your required actions are as follows:
  - Platoon leader reports completion to headquarters element.
  - Building exterior marked to indicate search is complete.
  - If building was vacant, search element secures entry points.
  - Building exterior is kept under surveillance until other local search operations are completed.

Vignette Title: Clear a Building (034)
Echelon: Infantry Platoon
Leader Skill: Tactical
Target Audience: Platoon Level Leaders
Methodology: Seminar/Small-Group Discussion

ANNEX A: SOLDIER SUPPORT MATERIAL

1. **Scenario**:

Today is D+ 20 and the IBCT deployed to AO Eagle in Montenegro in June, as part of a NATO Peace Enforcement Force in response to increasing violence in that country. The leaders of Serbia want to reunite the nation back into the Yugoslavia that it once was. The tens of thousands of ethnic Albanians who left Kosovo in 1998 and 1999 still reside in Montenegro and are viewed by many Montenegrins as a drain on Montenegro's potential prosperity. There have been an increasing number of reports of violence against minorities in the past six months.

Intelligence reports and interviews with local nationals indicate a major cache of arms located in Building #41 in the village of Pljevja. Building #41 is a 3-story masonry apartment and storage building. There is a possibility that the building has a basement, but drawings are not available. It has working gas and electricity devices. Original floor plans are provided at Tabs C-E, however, its current precise floor plan is unknown. The roof is accessible by a hatch-type entry. Gunfire has been heard coming from the building and local residents indicate there are 10-15 personnel guarding the cache. Estimates indicate these personnel are armed with light weapons, at least one machine gun and at least one RPG launcher. The Company commander sent your platoon a warning order to prepare for the mission to clear and secure building #41. In two hours, you are to report to the company CP and present a back brief on your concept for this mission.

2. **Requirement**: In your small groups, develop a concept plan and schematic on how to clear this building and identify additional support required completing the mission successfully. Be prepared to re-convene back into the large group to present your solution and/or approach and discuss the pros and cons of each group's approach. Some issues that each discussion group should address include but are not limited to the following:

    a. What additional guidance may you need and how will you approach Building #41?
    b. Does your current ROE enable you to conduct the mission in the "normal" manner outlined in FM? What changes need to be requested? What if you don't get them? What type of search technique would you use?
    c. What platoon command and control issues will have to be resolved?
    d. How will you evacuate casualties?
    e. How did you establish your plan of room clearances?
    f. How will you be able to employ fire support? (mortars, attack helicopters, artillery)
    g. How does your search element keep your security and support elements focused on your location and search progress?
    h. What planning factors are required for detainees and possible barricades?
    i. What actions do you take if you receive fire while inside the building?
    j. How does the size and armament of the threat force impact your plan and ROE?

Vignette Title:	Clear a Building (034)
Echelon:	Infantry Platoon
Leader Skill:	Tactical
Target Audience:	Platoon Level Leaders
Methodology:	Seminar/Small-Group Discussion

Appendix 1 to Annex A: Village Schematic

Village of PLJEVJA

Vignette Title: Clear a Building (034)
Echelon: Infantry Platoon
Leader Skill: Tactical
Target Audience: Platoon Level Leaders
Methodology: Seminar/Small-Group Discussion
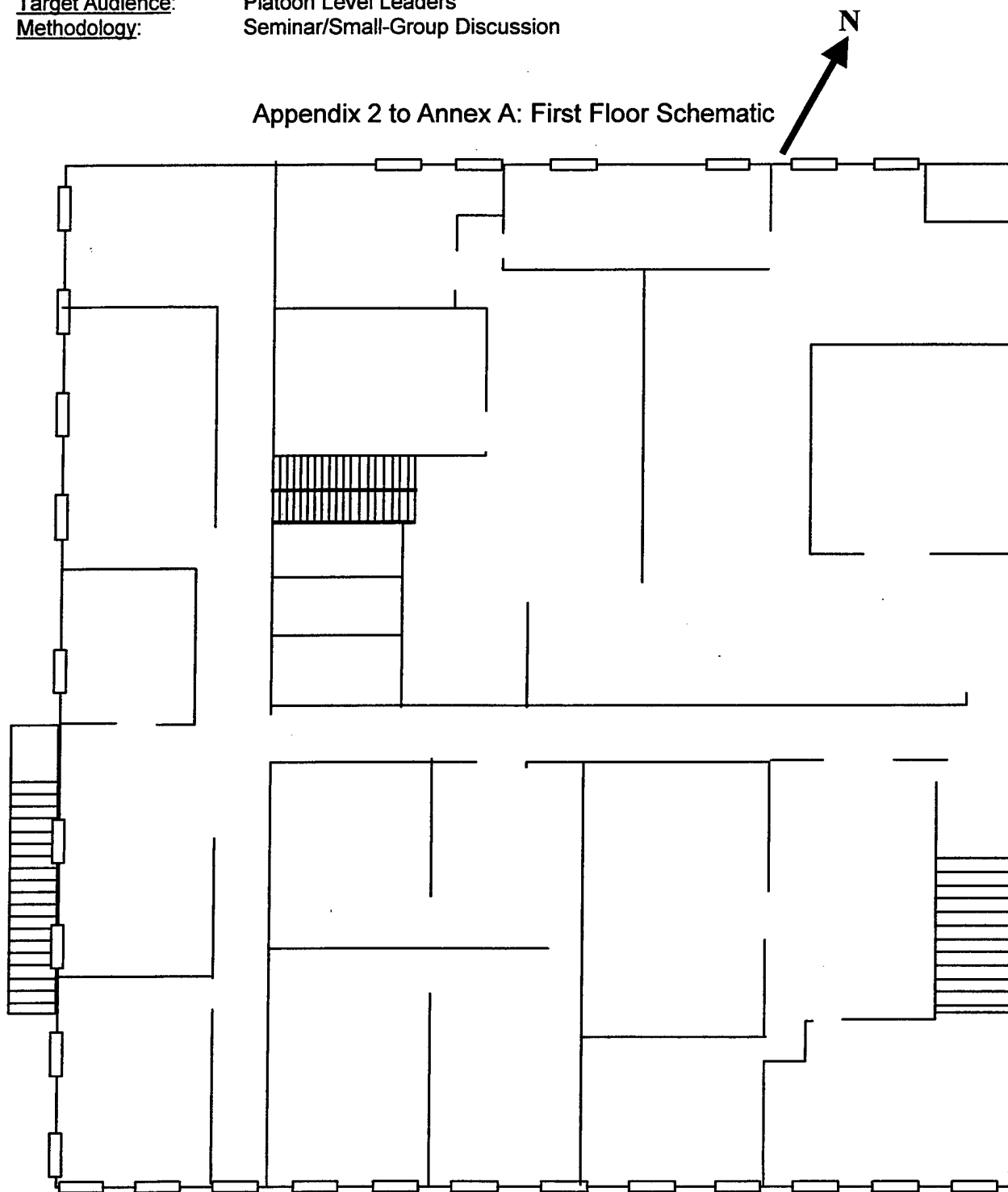
N
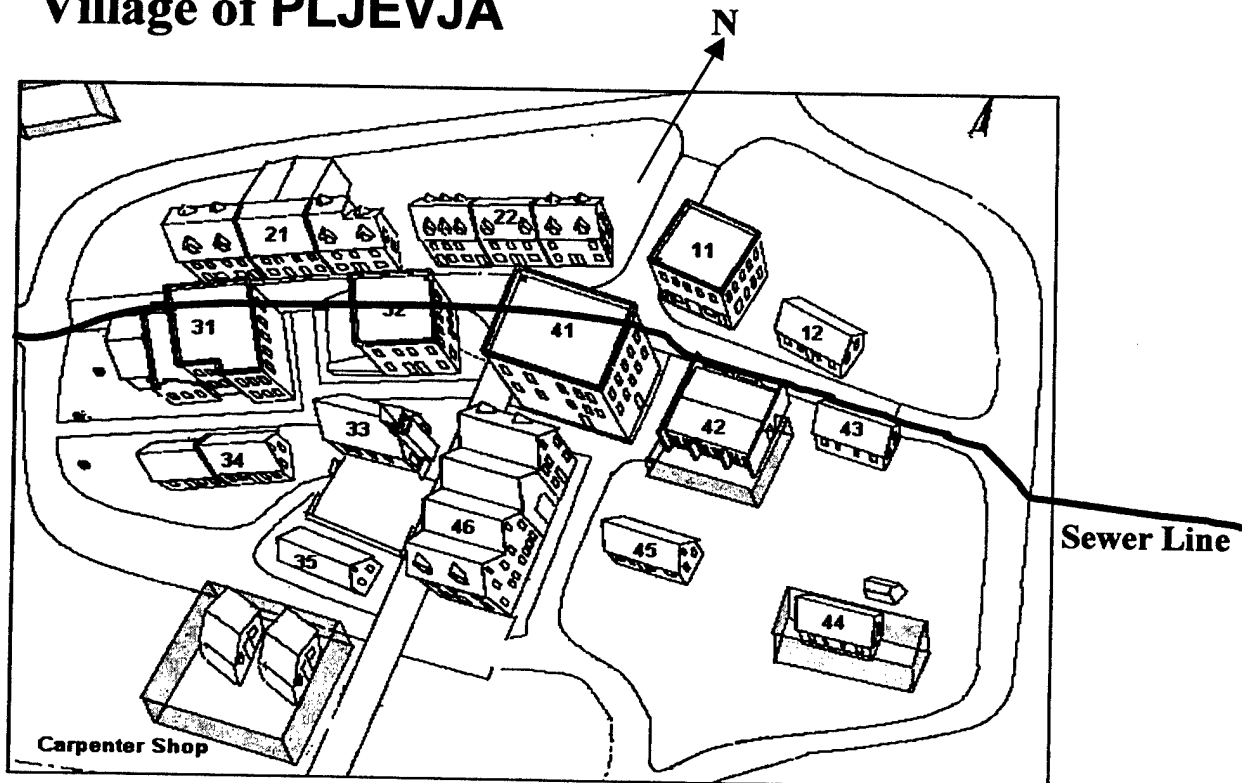
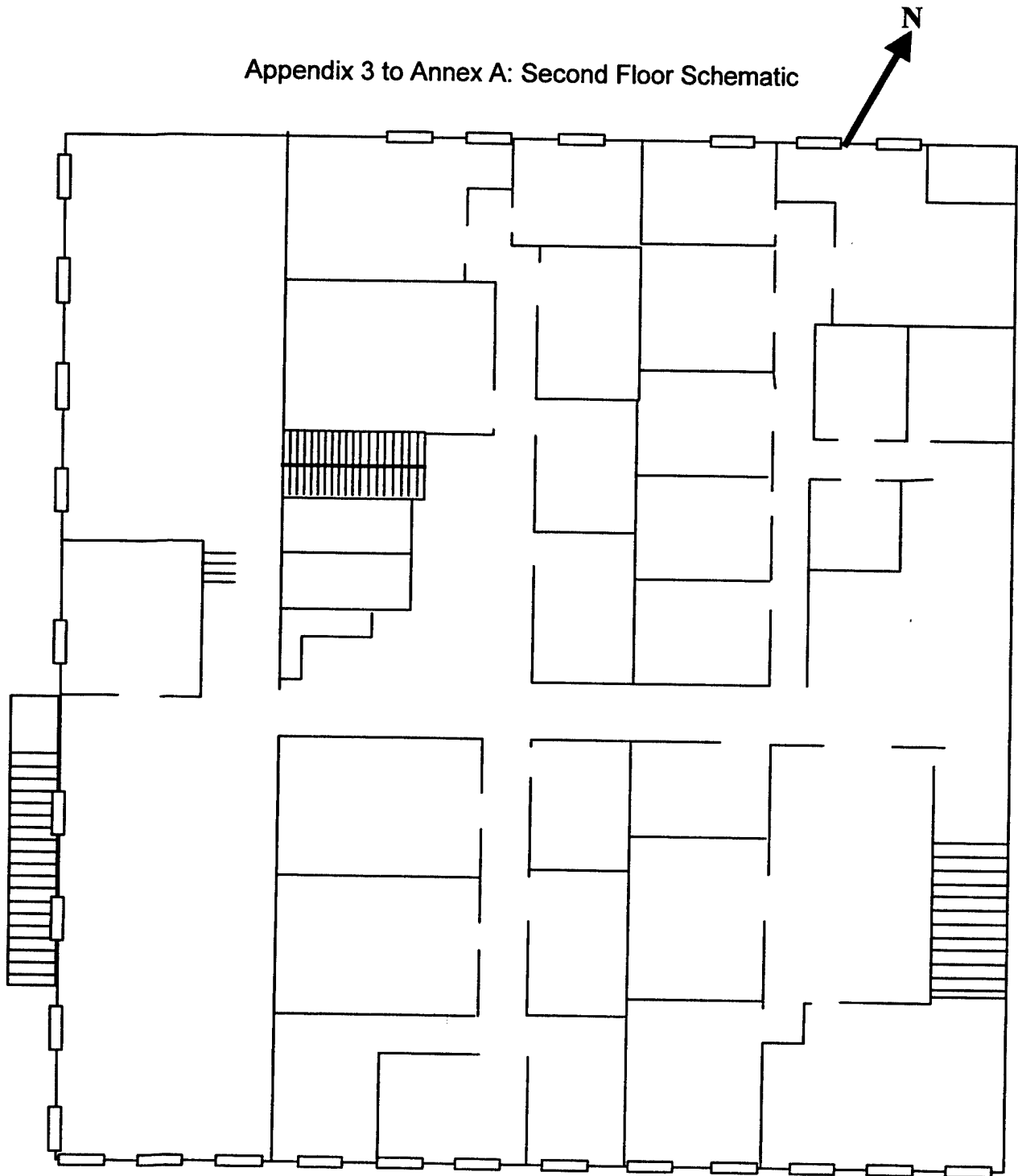## Appendix 2 to Annex A: First Floor Schematic

Clear a Building (034)
Infantry Platoon
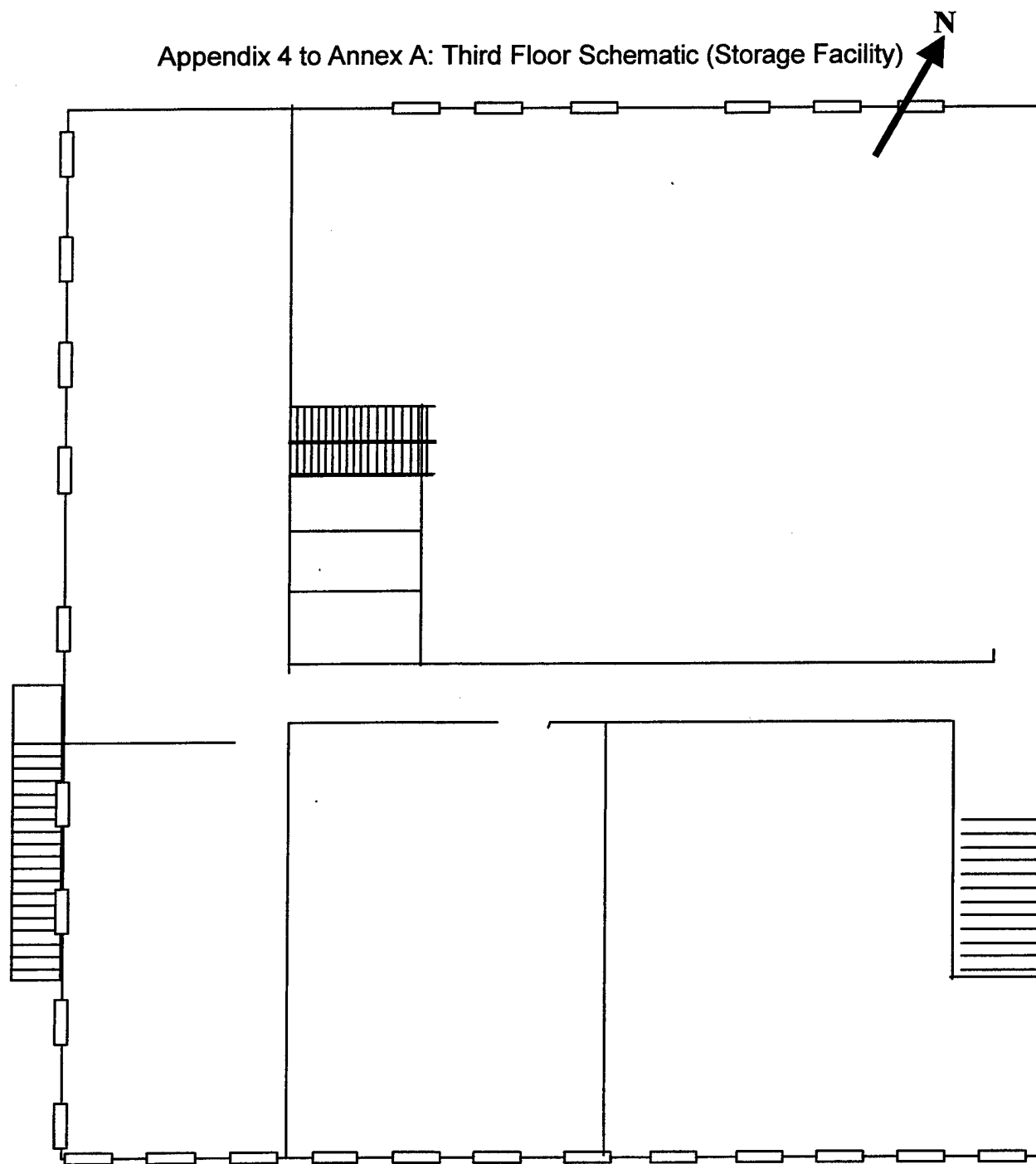Tactical
Platoon Level Leaders
Seminar/Small-Group Discussion

Appendix 3 to Annex A: Second Floor Schematic

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Vignette Title: Clear a Building (034)
Echelon: Infantry Platoon
Leader Skill: Tactical
Target Audience: Platoon Level Leaders
Methodology: Seminar/Small-Group Discussion

Appendix 4 to Annex A: Third Floor Schematic (Storage Facility)

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Vignette Title: Establish a Collection Point For NEO Evacuees and DPRE's (018)
Echelon: Battalion/Squadron
Leader Skill: Conceptual
Target Audience: Company/Troop/Battery Commanders and Platoon Leaders
Methodology: Seminar/Small-Group Discussion

Vignette Instructor Guide

1. **References**
   - FM 22-100, Army Leadership, Chap. 4, SUBJ: Direct Leadership Skills, pp. 4-18 Conceptual.
   - FM 71-3, The Armored and Mechanized Infantry Brigade, January 1996.
   - ARTEP 7-94-MTP, Mission Training Plan for the Infantry Battalion, October 1989.
   - FM 41-10, Civilian Affairs Operations.
   - Reimer Digital Training Library, at URL http://155.217.58.58/cgi-bin/atdl.dll/tc/7-98-1/chap212.htm
   - IBCT O & O, 30 June, 2000 (Final).
   - IBCT SOP(s).
   - IBCT Tactical References.

2. **Purpose.** The purpose of this vignette is to support leader discussions on conceptual skills required for creating solutions to providing care for NEO Evacuees and Displaced Persons and Refugees (DPRE's) and Non Combatant Evacuation (NEO) personnel.

3. **Instructions For Leader**

   a. This vignette is designed to assist in the development of sound judgment, understanding decision parameters of the higher commander, using creative thinking in problem solving and recognizing the underlying short and long term issues that may impact a unit in this scenario. Small and large group discussions should develop innovative ideas and concepts to address the "non-standard" and/or "non-doctrinal" situations surrounding the situation presented in this vignette.

   b. Prior to conducting this training, familiarize yourself with the contents of this vignette and the listed references. As appropriate, provide your training groups copies of excerpts from those references that you feel are especially relevant to your particular training objectives. As a minimum, have at least one copy of all appropriate references at your training location. You will also need to provide students copies of the training support material contained in the annexes accompanying this vignette.

   c. Determine the training support materials you will need for your training, such as butcher paper, magic markers, overhead projectors, etc. and ensure that all support materials are available at the training location.

   d. Explain the purpose of the vignette and provide copies of Annex A (Soldier Support Material), the reference list and/or appropriate excerpts to your audience. Using an overhead projector, butcher paper, or chalkboard, provide the scenario to your audience. Ensure that you provide them copies of appropriate supporting materials or that those materials are available for them to view. Read the first requirement to your audience, clearly stating the expected outcome(s) of their small group discussions. Provide the groups with start and end times for the requirement (can be adjusted if required). Issue points designed to generate discussion on this topic are provided in the requirement paragraph. The instructor has the option of either assigning selected points to specific groups, pick specific points for each group to address, or have each group address all discussion points (time available may be a factor). Concluding large group discussions should highlight innovative concepts and/or strategies to properly address the issues presented by this vignette. This is an excellent opportunity for junior leaders to address leader issues one to two echelons above their positions.

   e. Divide your training audience into small groups of leaders of equal rank or positions. Each group should discuss issues surrounding the situation presented in this vignette. In some cases, identification of 2d and 3rd level effects is appropriate. It may be appropriate to appoint an individual within each group to be responsible for guiding the group through the discussion points and analysis of the situation presented by the vignette. (NOTE: this is a suggestion, NOT a requirement)

Vignette Title:	Establish a Collection Point For NEO Evacuees and DPRE's (018)
Echelon:	Battalion/Squadron
Leader Skill:	Conceptual
Target Audience:	Company/Troop/Battery Commanders and Platoon Leaders
Methodology:	Seminar/Small-Group Discussion

Vignette Instructor Guide (Con't)

f.   After an appropriate time, reconvene into one large group and have a representative of each small group present its concept or approach for resolving the issue highlighted by the vignette and discuss the pros and cons of each group's concept. Concluding large group discussions should highlight the leader challenges embedded in this vignette and the dynamics of developing new and innovative solutions. The IBCT leader may use these discussions to enhance subordinates' understanding of his leadership style and preferences.

g.   KEY TALKING POINTS. These talking points are provided to the instructor to supplement ideas and discussion points addressed by the small groups related to the issues embedded within this vignette.

- ✓ An evacuation site for this type of mission consists of 11 different areas: (See more detail at the digital training library at URL http://155.217.58.58/cgi-bin/atdl.dll/tc/7-98-1/chap212.htm)
- ✓ Entry Control Point
- ✓ In-processing and interview station
- ✓ Security personnel area
- ✓ Battalion TOC
- ✓ Comfort area
- ✓ Medical treatment area
- ✓ Search area
- ✓ Holding and interrogation area
- ✓ Confinement facility
- ✓ Local civilian authorities area
- ✓ Pet holding area
- • NEO is conducted in three types of environments: Permissive, Semi-permissive and Non-permissive. Given the terrorist and paramilitary threat presented in this vignette, what is the environment in which the NEO evacuation will be conducted?
- • How did the groups resolve separating the Muslims and Christians because of the current conflicts?
- • Did any groups come up with a new and innovative approach in attempting to create a task organization to support your mission?
- • What issues contributed to group's courses of action? Did groups identify operational planning concerns which include:
  - ✓ What additional resources are needed from the theater?
  - ✓ Is there an Embassy evacuation plan?
  - ✓ Can a safe haven location be created?
  - ✓ Distance from the ISB?
- • How does this situation cause you to change your SOP or TTPs?

Vignette Title: Establish a Collection Point For NEO Evacuees and DPRE's (018)
Echelon: Battalion/Squadron
Leader Skill: Conceptual
Target Audience: Company/Troop/Battery Commanders and Platoon Leaders
Methodology: Seminar/Small-Group Discussion

ANNEX A: SOLDIER SUPPORT MATERIAL

1. **Scenario:**

Today is D+2 and the IBCT, as part of a multi-national force, is deployed to the country of Djibouti, strategically located on the northeast coast of Africa along the Red Sea. A paramilitary force has crossed the Ethiopian border and invaded Djibouti. This has ignited the Christians and Muslims within the city to fighting, looting, and disrupting government services. Recent attacks against the government and local police forces have increased the animosity between Muslims and Christians in the country.

The IBCT current tactical mission is to conduct Non Combatant Evacuations (NEO's) of all US personnel and selected host nation or third-country nationals. The CENTCOM commander's intent is to quickly secure the collection sites within the city and conduct an immediate evacuation of all personnel to a central collection point at the airport. The roads heading north and east into the capital city of Djibouti are clogged with 35,000 Christian and Muslim DPRE's from the outlying areas fleeing from attacks to the North and East.

The IBCT commander has given your battalion the mission of establishing a consolidated collection point and evacuation site to provide food, shelter, processing, evacuation and/or relocation for all NEO and DPRE personnel. The other IBCT Battalions are currently preparing to conduct their NEO evacuation missions and collect DPREs. Their orders are to bring the NEO evacuees and DPREs to the consolidated collection point at your location. Your battalion is located in an assembly area in the vicinity of the Djibouti airport. The JTF J1 and J4 require you to coordinate your support efforts with their joint logistics center. The IBCT commander has requested a brief back on how you are going to establish the collection point to provide initial humanitarian support DPRE and NEO personnel.

2. **Requirement.** In your small group, identify and discuss the initial, subsequent and long-term implications with the DPRE's and NEO requirements. Be prepared to re-convene back into the large group to present your solution and/or approach and discuss the pros and cons of each group's approach. Some issues that each discussion group should address include but are not limited to the following:

    a.   Identify critical issues associated with completing this mission?

    b.   How long can the battalion sustain support for this large group of personnel?

    c.   What additional support will be required?

    d.   Given this mission, what is the initial, subsequent and long-term implications?

    e.   What task organization will best support this requirement? What is your recommendation to the IBCT commander?

    f.   What are your limits and restraints for handling the NEO and DPRE personnel?

    g.   How will you resolve separating Muslims and Christians DPRE's at your collection point requesting and seeking aid?

    h.   What Army values issues are raised in this scenario?

    i.   What ethical issues need to be identified?

    j.   What training would be required for the battalion to perform this mission?

    k.   How will you address requests for political asylum? How will special categories of people be treated (i.e. – US diplomatic personnel, foreign diplomatic personnel?)

    l.   What are counterintelligence considerations for the evacuation/site? How is the HUMINT cell in the MI Co used?

Appendix F

Acronyms

4ID	4th Infantry Division (Mechanized)
AAR	after action review
ABCS	Army Battle Command System
AC	Active Component
AFATDS	Advanced Field Artillery Tactical Data System
AI	artificial intelligence
ARI	U.S. Army Research Institute for the Behavioral and Social Sciences
ASAS	All Source Analysis System
AT	Annual Training
ATGM	Anti-Tank Guided Missile
ATLDP	Army Training and Leader Development Panel
BCC	Brigade Coordination Cell
BCTP	Battle Command Training Program
C4I	command, control, communications, computers, and intelligence
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance
CAL	Center for Army Leadership
CALL	Center for Army Lessons Learned
CPX	Command Post Exercise
CSS	combat service support
CSSCS	Combat Service Support Control System
CTC	Combat Training Center
DO-COR	Delivery Order Contracting Officer's Representative
DTLOMS	doctrine, training, leader development, organization, materiel, and soldier issues
EXFOR	Experimental Force
FCS	Future Combat Systems
FTX	field training exercises
IBCT	Interim Brigade Combat Team
IDT	Inactive Duty Training
IO	Information Operations
KSA	knowledge, skills, and aptitudes
LSTP	Leader Sustainment Training Program
MCS	Maneuver Control System

MDMP	Military Decision-Making Process
MGS	Mobile Gun System
MSTF	Mission Support Training Facility
MTP	Mission Training Plan
MTW	major theater war
NCO	Non-Commissioned Officer
NCOES	Non-Commissioned Officer Education System
NGO	Non-Governmental Organizations
OBC	Officer's Basic Course
OES	Officer Education System
PERSCOM	U.S. Army Personnel Command
PVO	Private Voluntary Organization
QTB	Quarterly Training Briefing
RC	Reserve Component
RSTA	Reconnaissance, Surveillance, and Target Acquisition
SASO	stability and support operations
SME	subject matter expert
SOP	standing operating procedure
SSC	smaller-scale contingencies
TEWT	tactical exercises without troops
TLS	Training, Leader Development, and Soldier Issues
TO&E	Table of Organization and Equipment
TRADOC	U.S. Army Training and Doctrine Command
TSP	training support package
TTP	tactics, techniques, and procedures
UAV	Unmanned Aerial Vehicle
WFX	Warfighter Exercise